

What Problematic Behaviors are Observed among Mentally Handicapped Children Receiving Pediatric Physical Therapy?

MASAYUKI UESUGI¹⁾, SUSUMU NARUSE¹⁾, YURI INOUE¹⁾, HIDEKI KOEDA¹⁾,
MAKOTO GOTOU¹⁾, YOSIYUMI NANBA²⁾, KENTARO TOKUHISA³⁾

¹⁾Kobe International University: 9-1-6 Koyouchou, Higashinadaku, Kobe City, Hyogo 658-0032, Japan. TEL: +81 78-845-3131, E-mail: uesugi@kobe-kiiu.ac.jp

²⁾Matue co-medical College

³⁾Department of Rehabilitation Medicine, Nishiyamato Rehabilitation Hospital

Abstract. [Purpose] This study aimed to examine problematic behaviors of mentally handicapped children receiving pediatric physical therapy, through applying the Japanese version of the Aberrant Behavior Checklist(ABC-J) to persons receiving pediatric physical therapy. [Subjects] Subjects were 26 handicapped children who had received pediatric physical therapy (18 males and 8 females, aged from 1 year and 4 months to 19 years and 10 months). The raters were 5 physical therapists and 1 occupational therapist. [Methods] The subjects were rated using ABC-J. [Results] Twenty-four of 26 subjects showed “Irritability”, 23 subjects showed “Lethargy”, 13 subjects showed “Stereotypy”, 23 subjects showed “Hyperactivity”, 12 subjects showed “Inappropriate speech”. [Conclusion] “Irritability” “Lethargy” and “Hyperactivity” showed comparatively a stronger tendencies. However, all items were graded high in comparison with reports for Down syndrome. The results of this study suggest that the subjects of pediatric physical therapy show problem in problematic behaviors.

Key words: Problematic behaviors, Pediatric physical therapy, Japanese manuals of Aberrant Behavior Checklist

(This article was submitted Apr. 15, 2010, and was accepted Apr. 29, 2010)

INTRODUCTION

Pediatric physical therapists often treat mentally-handicapped children as well as physically-handicapped children¹⁾. Pediatric physical therapists are required to deepen their understanding of mental retardation²⁾, and pediatric physical therapy approaches are required to account for coexisting mental retardation³⁾. Development tests that are usually used to measure mental retardation of handicapped persons, however, do not reveal problematic behaviors that may disturb pediatric physical therapy. These problematic behaviors are irritability, lethargy, hyperactivity,

inappropriate speech and so on. This study aimed to the examine problematic behaviors of children receiving pediatric physical therapy, through assessing them with the Japanese version of the Aberrant Behavior Checklist (ABC-J)⁴⁾.

SUBJECTS AND METHODS

The subjects were 26 handicapped children(18 males and 8 females, aged from 1 year and 4 months to 19 years and 10 months) receiving pediatric physical therapy at one of three facilities: a child daycare facility, a pediatric hospital, and a rehabilitation facility for physically handicapped

Table 1. Characteristics of subjects

case	Diagnosis	Age	sex	GMFCS (I–V)	Language (4stage)	RyouikuTechou (3stage)
1	Mental Retardation	2Y5M	Female	III	Babbling	
2	Cerebral palsy	5Y9M	male	III	Two word sentences	
3	Pierre Robin Syndrome	3Y3M	male	I	Babbling	B1
4	3P Torisomy	12Y1M	Female	I	Words with meaning	A
5	epilepsy	6Y6M	Female	IV	Babbling	A
6	Cerebral palsy	5Y8M	male	III	Two word sentences	A
7	Mental Retardation	3Y7M	Female	I	Words with meaning	B1
8	Mental Retardation	5Y1M	male	II	Babbling	A
9	Mental Retardation	8Y	male	IV	Babbling	A
10	Cerebral palsy	4Y10M	male	IV	Two word sentences	
11	West Syndrome	5Y1M	male	IV	Babbling	A
12	8p-Syndrome	13Y11M	male	II	Babbling	A
13	Cerebral palsy	7Y4M	male	V	Non verbal	
14	Down syndrome	1Y4M	male	IV	Babbling	
15	Cerebral palsy	13Y6M	Female	V	Babbling	
16	Cerebral palsy	4Y7M	Female	V	Babbling	A
17	Cerebral palsy	4Y10M	male	V	Babbling	A
18	Autism	9Y4M	male	I	Babbling	A
19	Cerebral palsy	7Y9M	male	III	Two word sentences	
20	Mowat Wilson synd	5Y3M	male	V	Non verbal	A
21	Mental Retardation	15Y5M	Female	I	Non verbal	A
22	Mowat Wilson synd	7Y7M	male	I	Non verbal	A
23	Pena-Shokeir Syndrome	19Y10M	Female	I	Words with meaning	A
24	Tuberous sclerosis	13Y	male	II	Babbling	A
25	Microcephaly	16Y	male	I	Words with meaning	A
26	Mental Retardation	9Y10M	male	II	Babbling	A

YM: represent year and month. Ryouiku techou: A= severe mental retardation, and B1= moderate mental retardation.

persons. Table 1 shows details of the subjects. All parents of the children were informed of the study in writing and consented to their children to participating in the study. The examiners were 4 physical therapists and 1 occupational therapist working at the facilities/hospital. Using ABC-J, each examiner assessed the problematic behaviors of the mentally-handicapped children who the examiners knew well. In order to compare the severity of different problematic behavior types, the median and its percentage of the total score were calculated for each problematic behavior type from the assessment results. The ABC⁵⁾ is a questionnaire developed by Aman et al. to assess problematic behaviors of mentally-handicapped persons. The ABC is used for many studies, including studies on syndrome phenotypes and pharmacotherapy effects. Outside Japan, many studies use ABC^{6–13)}. ABC has 58 questionnaire items in total: 15 *irritability* items, 16 *lethargy* items, 7 *stereotypy* items, 16 *hyperactivity* items,

and 4 *inappropriate speech* items. Medical staff, parents, caretakers, and other examiners who know the subjects well, assess these items using a 4-point scale: No problems (0 point), minor problems (1 point), moderate problems (2 points), and major problems (3 points). Points filled in by the examiners on the score sheets indicate the severity of the problematic behavior.

Ryouiku Techou is administered by the Japanese Government for person with intellectual disability to assist with consultation about intellectual disability, and to the administration of help various welfare systems. It is classified into three stages (A, B1, B2) of intellectual disability. A means a serious intellectual disability, B1 means intellectual disability of the moderate degree, and B2 means a slight intellectual disability.

Among the 26 persons, *irritability* was observed in 24 persons, *lethargy* in 23, *stereotypy* in 13, *hyperactivity* in 23, and *inappropriate speech* in 12. For *irritability*, the median was 6.0 points and its

Table 2. Score of subjects

Subjects	Irritability (0–45)	Lethargy (0–48)	Stereotypy (0–21)	Hyperactivity (0–48)	Inappropriate speech (0–12)
1	12	22	15	6	1
2	17	4	0	27	2
3	2	18	0	7	0
4	6	0	0	10	9
5	1	1	0	6	0
6	14	2	0	17	9
7	4	0	0	0	0
8	27	0	0	0	0
9	0	5	2	1	0
10	0	5	0	1	2
11	29	33	8	10	0
12	18	12	2	32	2
13	11	17	6	11	0
14	0	5	0	1	0
15	18	6	1	8	1
16	6	18	1	10	0
17	12	19	10	8	3
18	11	29	16	23	7
19	2	1	0	3	0
20	3	32	17	13	0
21	6	17	15	19	1
22	5	10	11	29	5
23	0	2	0	1	0
24	1	7	3	1	1
25	1	1	0	0	0
26	9	2	0	7	0

percentage of the total score was 13.3%. The median and percentage of total score were 5.5 points and 11.5% for *lethargy*, 0.5 points and 2.4% for *stereotypy*, 7.5 points and 15.6% for *hyperactivity*, and 0.0 points and 0.0% for *inappropriate speech* (Table. 2). Among the problematic behavior types included in ABC-J, *hyperactivity* showed the highest level of severity. This was followed by *irritability*, *lethargy*, *stereotypy*, and *inappropriate speech*.

DISCUSSION

In this study, problematic behaviors were observed in 23 out of the 26 persons, indicating that many persons receiving pediatric physical therapy have such behaviors. The results also indicate that ABC-J can reveal the problematic behaviors of handicapped persons and complement conventional development tests. *Lethargy* and *hyperactivity* are very different types of problematic behaviors, and pediatric physical therapists are trying to intervene

in both problematic behaviors of handicapped children. *Irritability*, *lethargy*, and *hyperactivity* were relatively severer than *stereotypy* and *inappropriate speech*. The differences among items, however, were not significant. The results of this study were compared with studies for persons with Down syndrome, which is typical cause of mental retardation. The comparison revealed that the scores for the children receiving pediatric physical therapy were higher in all ABC-J items than those for Down syndrome subjects. This suggests that mentally handicapped children receiving pediatric physical therapy have severe problematic behaviors.

A limitation of this study is that the subjects were selected only because they used one of the three facilities and could be easily included in the study. The examiners knew the subjects well, but how much they knew the subjects varied. Concerning person's problematic behaviors, not many reports are available, apart from Iwasaka's report¹⁴⁾ which indicates that some problematic behaviors improve

as subjects mature grow while others do not.

For the future, more data must be collected to discover the relationships between personal factors, including exercise level and age, and problematic behaviors. Since ABC-J was originally developed to measure pharmacotherapy effects on mentally-handicapped persons in schools for handicapped persons, studies on physically-handicapped persons and infants must also be conducted. As the authors previously reported, the reliability of ABC-J is not high¹⁵⁾. Therefore, more studies are required.

Problematic behaviors due to mental retardation are a major disturbing element for pediatric physical therapy. There are, however, only a few reports available that address such problematic behavior from the medical viewpoint¹⁴⁾. This report provides new information concerning problematic behaviors of mentally handicapped children receiving pediatric physical therapy, and has great significance as a pediatric physical therapy study.

REFERENCES

- 1) Hanzawa N: Rehabilitation of Children—Coping with Clinical Conditions and Life Stages. Tokyo: Kanahara Publishing, 2004(in Japanese).
- 2) Tada T: Roles of Physical Therapists at Schools for Handicapped Children. *Rigaku Ryoho Journal*, 2009, 44: 417–425(in Japanese).
- 3) Koike J: Current state and view of child's rehabilitation. *Rigaku Ryoho Journal*, 2003, 37: 363–371(in Japanese).
- 4) Aman MG, Singh NN: Japanese manuals of Aberrant Behavior Checklist. Tokyo: Jiho, 2006.
- 5) Aman MG, Singh NN: Aberrant Behavior Checklist—community, New York: Slosson Educational Publication Inc.
- 6) Dykens EM, Clarke DJ: Correlates of Maladaptive behavior in individuals with 5p-(cri du chat) syndrome. *Dev Med Chil Neuro*, 1997, 39: 752–756.
- 7) Clarks D, Boer H: Problem behaviors associated with deletion prader-willi, smith-magenis, and cri du chat syndromes: *American journal on mental retardation*, 1998, 103: 264–271.
- 8) Clarke DJ, Marston G: Problem behaviors associated with 15q- Angelman syndrome. *Am J Ment Retard*. 2000, 105: 25–31.
- 9) Mount RH, Hastings RP, Reilly S, et al.: Behaviour problems in adult women with Rett syndrome. *J Intellect Disabil Res*. 2002;46: 619–24.
- 10) Kau AS, Tierney E, Bukelis I, et al.: Social behavior profile in young males with fragile X syndrome: characteristics and specificity. *Am J Med Genet A*, 2004, 126: 9–17.
- 11) Kau AS, Reider EE, Payne L, et al.: Early behavior signs of psychiatric phenotypes in fragile X syndrome. *Am J Ment Retard*. 2000, 105: 286–299.
- 12) Gabriels RL, Cuccaro ML, Hill DE, et al.: Repetitive behaviors in autism: relationships with associated clinical features. *Res Dev Disabil*. 2005, 26: 169–181.
- 13) Graham JM Jr, Rosner B, Dykens E, et al.: Behavioral features of CHARGE syndrome (Hall-Hittner syndrome) comparison with Down syndrome, Prader-Willi syndrome, and Williams syndrome. *Am J Med genet A*, 2005, 15: 240–247.
- 14) Iwasaka H: A Developmental study of the behavior problems of mentally retarded children. *J Nara Med*, 1995, 46: 114–126(in Japanese).
- 15) Uesugi M: The reliability of Japanese manuals of aberrant behavior checklist in the daycare center for handicapped children. *J Phys The Sci*, 2010,22: 57–59.