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COMPARISON OF EVALUATIONS ON BEHAVIORAL PERFORMANCE OF INSTITUTIONALIZED CHILDREN BY THEIR PRIMARY CAREGIVERS AND SCHOOL TEACHERS WITH SPECIAL REFERENCE TO REACTIVE ATTACHMENT DISORDER

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Abstract
The purpose of this study was to compare the behavioral performances of institutionalized children without and with Reactive Attachment Disorder of ICD-10 criteria by primary caregivers and school teachers. Fifty 4- to 10-year-old institutionalized children were assessed. Their primary caregivers completed the Child Behavioral Checklist and Social-Maturity Skill Scale for each child. School teachers completed the Teacher's Report Form. Semi-structured interviews with caregivers were conducted to obtain information on the children. The consistent behavioral patterns of children without and with RAD were not shown between in school and in institution. Two possible inferences were suggested: (1) Behavioral patterns in most of children are different depending on environments. (2) Viewpoints & judgements of severity on behavioral problems of same children are different between primary caregivers in institutions and school teachers. Though developmental changes on behavioral problems were not indicated, it was proved that children with RAD easily show aggressive and delinquent behaviors more than children without RAD as they grows. Social maturity skills showed a tendency to decline when such externalizing problems became severer.

Key Words: Reactive attachment disorder, CBCL, TRF, Behavioral problems, Social skill development, Institutionalized children

Introduction
Recently, the number of guidance cases for maltreated children in Japan has increased. In 2000, 174 child guidance centers in all of Japan accepted 17,725 guidance cases for maltreated children out of 362,655 cases in all. The number was 16 times as large as that in 1990 (1,101 cases), when government agency had started to collect statistics on child abuse in first. As process of care program, 2,530 children were admitted to child welfare institutions in 2000. This number was about 2 times as large as that in 1998 (1,391 cases). The same tendencies were observed in Miyagi prefecture. In 2001, three child guidance centers accepted 619 guidance cases for maltreated children, which was about 16 times as large as that in 1991 (39 cases). Through investigation of institutionalized children in Miyagi prefecture, Tadano, F., et al. (2000) suggested that parent's
mental health is one of the most important factors for nursing children.

For young children, the experiences to live separately from family or be suffered maltreatment influences on the developmental patterns of attachment. Zeanah and Emde (1994) reviewed literature and reported that clinically disordered attachment patterns were derived from data on the social behavior of maltreated children and of institutionalized children. Therefore it is important for all clinicians to be familiar with the clinical dimensions of attachment, techniques for assessment of attachment, and risk factors for disturbances of attachment which may require more in-depth assessment (Boris, et al., 1997).

The construct of attachment has been researched since Bowlby first investigated the relationships on the social and emotional development. The patterns of attachment were measured in a standardized laboratory procedure reliably (Ainsworth, et al., 1978). These researches contributed to investigating of relationship patterns between children and primary caregivers. But laboratory assessments of attachment patterns are not easily transferable to the clinical realm (Boris, et al., 1997).

Boris, N.W., & Zeanah, C.H. (1999) suggested that attachments between young children and their caregivers exist along a clinical continuum ranging from secure attachment to attachment disorder (refer to Figure 1). The least adaptive level of attachment was assumed as Disorder of Non-Attachment/RAD.

Reactive attachment disorder (RAD) was introduced for the first time in DSM-III. At present, this construct is used both in DSM-IV (American Psychiatric Press, 1994) and

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**Figure 1. Proposed continuum of levels attachment in young children (quotation from Boris, N. W., & Zeanah, C. H., 1999)**
ICD-10 (World Health Organization, 1992). However, its definition of RAD differs across the two diagnostic systems.

In DSM-IV, two criteria are suggested for Reactive Attachment Disorder of Infancy or Early Childhood. First, the young child exhibits strongly contradictory or ambivalent social responses, emotional distress or unresponsiveness, and fearfulness or hypervigilance. Second, the child exhibits lack of selected or preferred attachments, instead seeking comfort, nurturance, or affection indiscriminately. These criteria subtyped into two: inhibited and disinhibited. Inhibited type child is generally withdrawn and hypervigilant and seeks proximity to potential caregivers in ambivalent or odd ways. Disinhibited type child seeks proximity and contacts with any available caregivers, known as indiscriminate sociability.

In ICD-10, Disorders of Social Functioning with Onset Specific to Childhood and Adolescence are divided into five subtypes: Elective mutism, Reactive attachment disorder of childhood, Disinhibited attachment disorder of childhood, Other childhood disorders of social functioning and Childhood disorder of social functioning, unspecified. The definition of RAD in ICD-10 matches to the inhibited type of Reactive attachment disorder in DSM-IV. The definition of Disinhibited attachment disorder of childhood in ICD-10 matches to the disinhibited type of Reactive attachment disorder in DSM-IV. These criteria refer to persistently disturbed social relatedness of the child that is extensively demonstrated across social situations. Especially as to RAD, it is mentioned that this disorder probably occurs as a direct result of severe parental neglect or abuse, and that this is associated with emotional disturbances like poor social interactions and frequent aggression towards self and others.

By the way, does children diagnosed as RAD behave in same pattern in any places? Karen, M., et al. (2001) suggested the possibility that different contexts of interactions elicit distinct patterns of dyadic behaviors. When we diagnose the behavioral problem patterns of children, it is important to observe them in several places. The reason is that the behavioral problem patterns with primary caregiver always may not be the same with school teacher. Especially for institutionalized children, school and institution are important places to spend most of their time. It is important to investigate behavioral problems in institutionalized children both in institution and in school from this standpoint that behaviors depend on contexts.

This study mainly focused on the behavioral problem patterns of institutionalized children with and without RAD. The purpose was two-fold: (1) to compare the behavioral problem patterns of children, diagnosed with and without RAD across school and institution; and (2) specially to investigate behavioral problems in school. First purpose was focused on developmental comparison as more detailed investigation. Second purpose was focused from three perspectives: (1) comparison of behavioral problems between children with RAD and without RAD, (2) comparison of those among each age group and (3) relationship between those and social skills.

Four hypotheses were suggested: (1) The significant correlation between behaviors in school and those in institution would not be detected because behavioral problems in institution would be severer than in school for most children, whether they had been diagnosed as RAD or not. (2) Children with RAD would exhibit severer internalizing
and externalizing behavioral problems in both institution and school as compared to children without RAD. (3) Behavioral problems in school would decrease as children grow, whether they had been diagnosed as RAD or not. (4) In school situation, the social skill development would be negatively correlated to the severity of behavioral problems in children with RAD.

Method

Participants

Demographic characteristics of the samples are presented in Table 1. Eighty-four 4 to 10 year-old children were assessed in the current study. They had been placed to 6 Child Welfare Institutions in Miyagi Prefecture because of their family problems; for example abandonment, child abuse, arrest of parent and so on. Sixteen children were excluded from those children in there, because they had been diagnosed as several disorders by a child psychiatrist using ICD-10 criteria before: 2 children with pervasive development disorder, 9 with disinhibited attachment disorder, and 5 with mental retardation. Eighteen children were also excluded because of data deficits. Then, these 50 children were classified into 3 groups: Group A, preschoolers, 4-to 6-year-olds, n=15; Group B, 1st and 2nd grade students, 7-to 8-year-olds, n=19; and Group C, 3rd and 4th grade students, 9-to 10-year-olds, n=16. For further research each group was divided into two subgroups, depending on whether children have RAD or not, such as GA-R; group A children with RAD, and GA-NR; group A children without RAD.

The ratio of boys and girls and the percentage of children with RAD within each age group were approximately equal. In children with RAD, the overall rate of the past history of maltreatment experiences was apparently higher than those without RAD ($x^2(2)=37.71$, $p<.01$).

Measures

1. Child Behavioral Checklist / 4-18 (Japanese version)

The Child Behavioral Checklist (Achenbach, 1991) is a 113-item parent report

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>Group A (N=15) age: 4-6year-old</th>
<th>Group B (n=19) age: 7-8year-old</th>
<th>Group C (n=16) age: 9-10year-old</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (months)</td>
<td>Mean or n</td>
<td>SD or %</td>
<td>Mean or n</td>
</tr>
<tr>
<td>Gender</td>
<td>73.8</td>
<td>8.17</td>
<td>97.1</td>
</tr>
<tr>
<td>Boys: n, %</td>
<td>7</td>
<td>46.7</td>
<td>9</td>
</tr>
<tr>
<td>Girls: n, %</td>
<td>8</td>
<td>53.3</td>
<td>10</td>
</tr>
<tr>
<td>Maltreated children: n, %</td>
<td>12</td>
<td>80.0</td>
<td>14</td>
</tr>
<tr>
<td>RAD diagnosis</td>
<td>(-): n, %</td>
<td></td>
<td></td>
</tr>
<tr>
<td>name of subgroup</td>
<td>GA-NR</td>
<td></td>
<td>GB-NR</td>
</tr>
<tr>
<td>(+): n, %</td>
<td>7</td>
<td>46.7</td>
<td>5</td>
</tr>
<tr>
<td>name of subgroup</td>
<td>GA-R</td>
<td></td>
<td>GB-R</td>
</tr>
</tbody>
</table>

Note: ICD-10=International Classification of Mental and Behavioral Disorders; RAD=Reactive Attachment Disorder; GA (B or C)= Group A (B or C); -R=subgroup of children with RAD; -NR=subgroup of children without RAD
measure of children's competencies and behavioral problems. The respondent endorses each item as "very true or often true", "somewhat or sometimes true" or "not true" of the child by using 0-1-2 scale at present or within the past six months. It is a commonly used measure with good reliability and validity. This measure is used in many clinical or experimental situations by previous clinicians or researchers in Japan (Sugawara, M., et al., 1999, Yamada, H., et al., 2002). In this study, standardized Japanese version of CBCL / 4-18 was used (Itani, T., et al., 2001), whose broad-band scales analyze children's behavioral problems; Internalizing T scores (anxious/depressed, somatic and withdrawal symptoms), Externalizing T scores (aggressive and delinquent behavior) and Total T scores (overall problems). Based on the standardization process of the original version, it was calculated T score for eight Syndrome Scales as well as for Internalizing and Externalizing, together with Total Scores and then made out a list of profiles showing criteria for normal, borderline and clinical range. T score of 64 and over was considered a clinically significant level for broad band scales, which indicates the 95th percentile. Internal consistency reliability, construct validity and criterion-related validity were also confirmed in Japanese version.

2. Teacher's Report Form / 4-18 (Japanese version)

The Teacher's Report Form (Achenbach, 1986) is a measure that consists of 113 problem items. Each teacher endorses each item in the same method as CBCL. In this study, standardized Japanese version of TRF / 4-18 was used, whose broad-band scales analyze children's behavioral problems; Internalizing T scores (anxious/depressed, somatic and withdrawal symptoms), Externalizing T scores (aggressive and delinquent behavior) and Total T scores (overall problems). T score of 64 and over was considered a clinically significant level for broad band scales, which indicates the 95th percentile.

3. Social-Maturity Skill Scale (new version)

Social-Maturity Skill Scale (Nihon Bunka Kagakusha, 1980) is a standardized measure of social skills for 1- to 13-year-old children. The Vineland Social Maturity Scale (Doll, E.A., 1935) was translated into the Japanese version in 1959, and in 1980 it was revised. It is one of the most commonly used adult-report developmental questionnaires in Japan, in which items are matched to typical developmental trajectory of children's social skills in the context of Japanese culture. Based on the standardization process, internal consistency reliability and coefficient of stability were confirmed in this scale. Social skill ages (SA) for six social skill areas (self-help, locomotion, occupation, communication, socialization, self direction) and that for general social skills (total SA) are obtained. Social skill quotient (SQ: total SA/chronological age \( \times 100 \)) is also figured out, that represents the percentage of general acquisition of age appropriate social skills. In this study, SQ was used to assess the general development of each child's social skills.

Procedure

This study was done as a part of follow-up consultations for the institutionalized children. The CBCL, TRF and Social-Maturity Skill Scales were completed by primary care staffs and school teachers for each child. Individual semi-structured interviews on
children with primary care staff were done by a child psychiatrist and five clinical psychologists from January to March, 2002. The interview was focused on behavioral problems, social skill performance, social interaction with peers and child-adult relationships of their caring children. The Child psychiatrist diagnosed mental and behavioral disorders using ICD-10 criteria including reactive attachment disorder and ascertained the disorders that had already been diagnosed for each child. After the assessments were completed, all participating primary caregivers received a summary report on their child's behavioral problems and social skills to provide them further understanding of their child.

Analytic Procedure

Although the Leven test for homogeneity of variance didn't reveal significant differences between the groups, the data were not regarded as normally distributed. Therefore, in intergroup comparisons, the collected data were analyzed by nonparametric test (Kruskal Wallis-H-test) to examine the differences of the scores (three kinds of TRF T scores) between age groups of sample children. Mann-Whitney U test was used in multiple comparison and in comparison of scores between two subgroups of the same age group. Because of small size, in multiple comparison exact tests were conducted with Bonferroni's inequality. And Spearman correlation coefficients were used to compute the relationship between the scores within each age group. In order to find the demographic characteristics of samples, categorical data were analyzed by \( \chi^2 \). Differences were assessed with two-sided tests. Adequate sample sizes were assured for each statistical method. Data were analyzed with SPSS 10.0 for Windows.

Result

1. Relationship between three types of CBCL T scores and three types of TRF T scores of each age group

To investigate the behavioral problem patterns of children with and without RAD across school and institution, relationship between three types of CBCL T scores and three types of TRF T scores were examined. Medians and ranges of CBCL, TRF and SQ scores are shown in Table 2.

Table 2 CBCL T scores, TRF T scores and SQ score

<table>
<thead>
<tr>
<th>Child group of sample</th>
<th>Group A</th>
<th>Group B</th>
<th>Group C</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>GA-NR (n=7)</td>
<td>GA-R (n=8)</td>
<td>GB-NR (n=5)</td>
</tr>
<tr>
<td>CBCL</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total T</td>
<td>48.0 34-56</td>
<td>63.5 52-94</td>
<td>47.0 37-51</td>
</tr>
<tr>
<td>Internalizing T</td>
<td>45.0 42-52</td>
<td>57.0 52-92</td>
<td>45.0 42-56</td>
</tr>
<tr>
<td>Externalizing T</td>
<td>48.0 40-61</td>
<td>63.5 48-96</td>
<td>42.0 40-58</td>
</tr>
<tr>
<td>TRF</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total T</td>
<td>54.0 41-63</td>
<td>55.5 46-67</td>
<td>59.0 47-79</td>
</tr>
<tr>
<td>Internalizing T</td>
<td>54.0 49-63</td>
<td>52.0 49-62</td>
<td>60.0 49-65</td>
</tr>
<tr>
<td>Externalizing T</td>
<td>56.0 49-66</td>
<td>56.5 56-65</td>
<td>64.0 49-81</td>
</tr>
<tr>
<td>SQ</td>
<td>91.0 81-124</td>
<td>92.5 82-110</td>
<td>101.0 85-115</td>
</tr>
</tbody>
</table>

Note: CBCL Child Behavior Checklist; TRF=Teacher's Report Form; SQ=Social Skill Quotient
Reactive Attachment Disorder

(1) Children without RAD

In GB-NR, there were two significant positive correlations between CBCL total T scores and TRF internalizing T scores \((r=0.994, p<.01)\) and between CBCL externalizing T scores and TRF total T scores \((r=0.938, p<.05)\). Also in GC-NR, a significant positive correlation between CBCL externalizing T scores and TRF internalizing T scores \((r=0.887, p<.05)\).

(2) Children with RAD

In GC-R, a significant positive correlation between CBCL externalizing T scores and TRF total T scores was indicated \((r=0.628, p<.05)\).

Some correlations between CBCL T scores and TRF T scores were shown here in children without or with RAD of GB and GC. But there were no significant correlation between the same broad-band scales of each three CBCL T score and TRF T score at all: e.g. between CBCL internalizing T score and TRF internalizing T score of GB-R.

2. Differences between three types of CBCL T scores and TRF T scores among each age group

To obtain more information about the behavioral patterns of children, differences between three types of CBCL T scores and TRF T scores were analyzed.

(a) Children without RAD

I GA-NR

TRF internalizing T scores were significantly higher than CBCL internalizing T scores \((U=3.5, p<.01)\). TRF externalizing T scores were also significantly higher than CBCL externalizing T scores \((U=8.0, p<.05)\).

II GB-NR

TRF total T scores were significantly higher than CBCL total T scores \((U=2.5, p<.05)\). TRF internalizing T scores were also significantly higher than CBCL internalizing T scores \((U=2.0, p<.05)\).

III GC-NR

TRF internalizing T scores were significantly higher than CBCL internalizing T scores \((U=7.5, p<.05)\).

(b) Children with RAD

There were no significant differences between three types of CBCL T scores and TRF T scores among each age group.

It was shown that TRF T scores of children without RAD were apt to be higher than CBCL T scores. Though both internalizing and externalizing problems were apt to be apparent in nursery school and kindergarten in preschool age, internalizing problems were apt to be apparent in school in school age. In contrast with that, significant differences were not found in children with RAD.

3. Differences of three types of TRF T scores between children without RAD and children with RAD

To analyze the influence of RAD on behavioral problems in school, differences of three types of TRF T scores between children without RAD and children with RAD were examined among each age group.
Tadano et al.

1. Group A
There were no significant differences of three types of TRF T score between children without RAD and children with RAD.

2. Group B
Similarly there were no significant differences of those.

3. Group C
TRF total T scores of children with RAD were significantly higher than those of children without RAD ($U=5.5$, $p<.01$). TRF externalizing T scores of children with RAD were also significantly higher than those of children without RAD ($U=6.0$, $p<.01$).

It was proved that children with RAD were apt to show behavioral problems in school than children without RAD, especially in 3rd and 4th grade.

4. Differences in three types of TRF T scores between the age groups
To look for the probable children's developmental process of behavioral problems in school, TRF T scores of children with and without RAD between the age groups were examined.

There were no significant differences of three TRF T scores between the age groups.

As a result, children's developmental changes of behavioral problems in school were not detected in children without and with RAD.

5. Relationship between three types of TRF T scores and SQ scores of each age group
To research the influence of behavioral problems in school on social skill development, relationships between TRF T scores and SQ scores of children with and without RAD of each age group were analyzed.

1. Children without RAD
In GC-NR, a significant negative correlation between TRF externalizing T scores and SQ scores was indicated ($r=-0.875$, $p<.05$).

2. Children with RAD
In GA-R, a significant negative correlation between TRF externalizing T scores and SQ scores was indicated ($r=-0.711$, $p<.05$). Also in GB-R, a significant negative correlation between TRF externalizing T scores and SQ scores was indicated ($r=-0.620$, $p<.05$).

It was found that TRF externalizing T scores was a key negative variable related to social skill development whether children have RAD or not.

Discussion
1. The relationship of behavioral problem patterns across contexts
There were no significant correlation between same category of each three CBCL T score and TRF T score in any grades of children, whether children with RAD or not. Therefore our hypothesis was ensured that the significant correlation between behaviors in school and in institution would not be detected. This result can be interpreted in two ways as follows.

(1) One possibility is suggested that most of children without or with RAD behave differently at institutions and schools. Because of different environments and the rela-
tionships with different primarily familiar adults, their behavioral patterns might be changed.

(2) The other possibility is suggested that viewpoints & judgements of severity on behavioral problems of same children are different between primary caregivers in institutions and school teachers. Through comparison of primary school children's estimated behavioral patterns between by parents and by teachers, Yamashita, et al. (2002) suggested that different coders may have different evaluations on same children. It was suggested that their evaluations are different because recognized behavioral problems are changed in different environments.

In comparison of differences between each three type of CBCL T scores and TRF T scores, it was shown that TRF T scores of children without RAD were apt to be higher than CBCL T scores. Though both internalizing and externalizing problems were apt to be apparent in nursery and kindergarten in preschool age, internalizing problems were apt to be apparent in school in school age. In contrast with that, children with RAD demonstrated behavioral problems in same severe level both in institution and in school. Because we hypothesized that behavioral problems in institution would be severer than them in school in the most of children, this result is contrary to our expectations.

Children without RAD may demonstrate their behavioral problems in school easily. Or they may be evaluated easily by teachers as demonstrating behavioral problems. But we can hardly find children with clinically significant level of problems, except for TRF T scores in GB-NR. Therefore we probably may not need to worry about behavioral problems of children without RAD seriously, nevertheless we should pay attention to the progress of clinical outcomes.

2. The comparisons of children's behavioral problems in school between children without RAD and children with RAD

From preschoolers to 2nd grade's students, there were not significantly differences on behavioral problem in school between children without RAD and children with RAD. However in 3rd and 4th grade's students, children with RAD were apt to show overall behavioral problems & externalizing behavioral problems in school than children without RAD. Therefore this result suggested children with RAD more frequently show aggressive and delinquent behaviors than children without RAD as they grows.

3. Developmental processes of behavioral problems in school

In this study, we couldn't detect developmental changes of behavioral problems in children without and with RAD. But this result does not necessarily prove that the changes don't exist. Though investigation of CBCL T scores of institutionalized children with and without RAD, Tadano. (2002) suggested that 1st and 2nd grade students with RAD demonstrated significantly severer behavioral problems than preschoolers. He estimated that primary grade children with RAD have more difficulties to obtain information in new social situations after the entrance to primary school, (so problematic behaviors may be observed more visible and more frequently.), so problematic behaviors may be observed more visible and more frequently.
4. The relationships between behavioral problems in school and social skill development

Social Maturity skills showed a tendency to decline when externalizing problems became severer. Therefore it was suggested that aggressive and delinquent behaviors are related with Social Maturity skills. This tendency was observed whether children have RDA or not.

5. Limitation

Several limitations of this research should be mentioned. First, because we utilized small samples, it was impossible to analyze more complex variables such as specific behavioral problems. We need to investigate in more big samples. Second, in this research only institutionalized children were dealt with. If we reach the general conclusion, it will be needed to compare to homed children without and with RAD. Third, this research mainly depended on information obtained from clinical records on each child, three questionnaires and semi-structured interviews with primary caregivers. For more detailed analysis, we need to collect more data such as direct-observations or questionnaires from children themselves. It is needed for future study to develop clinically useful method to assess disordered attachment behaviors. And if possible, we want to interview teachers directly in the future.

Through daily clinical activities and research investigation, we want to contribute more to child welfare.

References


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