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Social Development of Young Children with ASD and ADHD symptoms

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Abstract

We investigated the social development of young children with ASD (Autistic Spectrum Disorders) and ADHD (Attention-Deficit / Hyperactivity Disorder) symptoms. The participants were 249 nursery school children requiring special care. They were divided in four groups: (1) children with high ASD and ADHD symptoms (HH group), (2) children with high ASD symptoms and low ADHD symptoms (HL group), (3) children with low ASD symptoms and high ADHD symptoms (LH group), and (4) children with low ASD and ADHD symptoms (LL group). Our study revealed that children with high ASD symptoms had difficulties in group activities, peer relationships, language development, cognitive development, and emotional development in early childhood. Children with high ADHD symptoms had difficulties in group activities. The results suggested that the “Social Development Checklist-R” was useful for understanding children with special needs and creating individual educational programs for them.

Key words: social development, ASD symptoms, ADHD symptoms, young children

Purpose

Recently, the number of children who have difficulties adapting to groups in daycare settings has increased in Japan (Hongo et al., 2003). Some of them are diagnosed, but others are not until they become adolescents. Regardless of the diagnosis of disabilities, such children need more support than others. To evaluate such children’s social development, Hongo et al. (2015) created the “Social Development Checklist.” Hongo et al. (2016) investigated the characteristics of social development among children requiring special care. We found that children needing special care faced challenges in group activities and peer relationships as well as delays in language, cognitive,

and emotional development. Then, we created the “Social Development Checklist Revised Version” (the “Social Development Checklist-R”) based on the analysis of social development of young children with externalizing behavior problems (Hongo et al., 2017). The “Social Development Checklist-R” has five domains: (1) Group activities, (2) Peer relationships, (3) Language development, (4) Cognitive development, and (5) Emotional development. The purpose of the present study was to explore the traits of young children with ASD and ADHD symptoms using the “Social Development Checklist-R.”

Method

1. Participants

The participants were 249 children requiring special care who face challenges adapting to groups in nursery schools. We divided children needing special care into four groups: (1) children with high ASD and ADHD symptoms (HH group), (2) children with high ASD symptoms and low ADHD symptoms (HL group), (3) children with low ASD symptoms and high ADHD symptoms (LH group), (4) children with low ASD and ADHD symptoms (LL group).

2. Research Period

We asked nursery school teachers to check on the social development of the children in their classrooms using the “Social Development Checklist-R” and the “Behavior Checklist for Children Requiring Special Care” from November of 2013 to February of 2014.

3. Measures

(1) The “Social Development Checklist-R” was used to evaluate children’s social development. The checklist consists of five domains: 1) Group activities, 2) Peer relationships, 3) Language development, 4) Cognitive development, and 5) Emotional development. Each domain has 10 items. Table 1 displays the items of the “Social Development Checklist-R.” We assigned 1 point to the answer “He/She can or could do it” and 0 to the answer “He/She cannot or could not do it” or “I don’t know.”

Table 1 Items of the “Social Development Checklist-R”

Group Activities	
G1.	He/She can reply when called by name in a circle time.
G2.	He/She can do easy hand play in a group.
G3.	He/She can play house by himself/herself.
G4.	He/She can move in line without using the rope.
G5.	He/She can engage in social pretend play with other children.
G6.	He/She can play a game with simple rules.
G7.	He/She can engage in cooperative play with four or five children.
G8.	He/She can concentrate on listening to his/her teachers for about 15 minutes.
G9.	He/She can create an original scenario with other children and engage in social pretend play using this scenario.
G10.	He/She can play a group game using rules without the teacher’s help.

Peer Relationships	
P1.	He/She can imitate his/her friend.
P2.	He/She approaches and touches a young child.
P3.	He/She comes to tell about his/her friend when he/she quarrels with his/her friend.
P4.	He/She mutually shows what he/she and his/her friend made.
P5.	He/She can wait for his/her turn on a swing by himself/herself.
P6.	He/She can apologize to other children spontaneously.
P7.	He/She can care for a young child.
P8.	He/She can play together, consulting or reaching a compromise with a friend.
P9.	He/She decides turns using Rock-Paper-Scissors.
P10.	He/She can play card games such as sevens.

Language Development	
L1.	He/She can speak in one-word sentences
L2.	He/She can say the name of things more than three.
L3.	He/She can speak in two-word sentences ("mom milk").
L4.	He/She understands both "big" and "small."
L5.	He/She can correctly answer the question, "When you are hungry, what do you do?"
L6.	He/She understands both "strong" and "weak."
L7.	He/She can talk about events that happened yesterday.
L8.	He/She can say the name of three kinds of flowers.
L9.	He/She can play a game of riddles.
L10.	He/She can name the day before Friday (Thursday).

Cognitive Development	
C1.	He/She understands his/her eyes, nose, mouth, and ear.
C2.	He/She can point to the things in a picture book.

- C3. He/She can imitate and draw the circle drawn in the shape of a spiral.
 - C4. He/She can repeat three numbers.
 - C5. He/She understands "front" and "back."
 - C6. He/She can take three pieces out of ten.
 - C7. He/She can imitate and draw a square.
 - C8. He/She understands the right and left of his/her own body.
 - C9. He/She can add five or fewer numbers.
 - C10. He/She can say the names of coins.
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Emotional Development

- E1. He/She can understand "fearful."
 - E2. He/She can understand a crying face and a laughing face.
 - E3. If he/she is praised, he/she is going to be praised more.
 - E4. He/She understands the facial expression of "anger," "joy," "surprise," and "sadness."
 - E5. He/She expresses his/her emotions using words (e.g., "I'm angry").
 - E6. Even if other children act unpleasantly toward him/her, he/she can control his/her emotions and say, "Please stop it."
 - E7. He/She makes a sad facial expression when he/she listens to sad stories.
 - E8. He/She tries to hide his/her failure from others.
 - E9. He/She feels a thrill when caught on purpose during a game of tag.
 - E10. He/She tries to hide his/he face from others when crying.
-

(2) The "Behavior Checklist for Children Requiring Special Care" was used to determine the characteristics of children with special needs. There were 14 items in the checklist. We used four items for ASD symptoms and four for ADHD symptoms (Table 2). We assigned a score of 2 points to the answer "He/She most likely does it," 1 point to "He/She likely does it," and 0 to "He/She likely does not do it."

The scores for ASD symptoms and ADHD symptoms varied between 0 and 8. The total score of each high group was 4 and over. The total score of each low group was under 4.

Results

1. Factor Analysis

Items of the "Behavior Checklist for Children Requiring Care" were analyzed using principal component factor analysis with Varimax orthogonal rotation. The analysis yielded three factors explaining 50.57% of the entire variance. Factor 1 was labeled "ADHD symptoms." Factor 2 was labeled "ASD symptoms." Factor 3 was labeled "Interpersonal Conflict" (Table 2). Cronbach's alpha value was .81 for "ADHD symptoms," .75 for "ASD symptoms," and .74 for "Interpersonal Conflict."

Table 2 Results of factor analysis

Items	Factor 1	Factor 2	Factor 3
ADHD symptoms ($\alpha = .81$)			
1 He/she cannot listen to the teacher throughout the whole activity.	.745	.142	.188
2 He/she does not follow a teacher's directions to "wait."	.690	.315	.138
3 He/she makes noise under the influence of other children.	.644	-.050	.231
4 He/she moves to a different topic in the middle of a conversation.	.589	.249	.249
ASD symptoms ($\alpha = .75$)			
1 He/she does not share his/her pleasure or interest with others.	-.007	.786	.122
2 He/she has difficulties with verbal communication.	.124	.718	-.036
3 He/she does not follow the directions when moving with a group.	.358	.606	.028
4 He/she moves somewhat awkwardly.	.106	.452	.062
Interpersonal Conflict ($\alpha = .74$)			
1 He/she gets angry at other children's behavior.	.245	-.032	.813
2 He/she does not accept his/her failure but excuses him/herself.	.325	-.043	.660
3 He/she differs in action greatly from day to day.	.124	.200	.548
Eigenvalues	2.462	1.977	1.745
Cumulative%	20.514	36.992	51.609

2. Scores for each domain

(1) Group activities

The scores for group activities were examined using a two-way ANOVA including ASD (2) and ADHD symptoms (2) as factors. There were main effects of ASD symptoms ($F[1,245] = 27.11$, $p < .001$) and ADHD symptoms ($F[1,245] = 6.41$, $p < .05$).

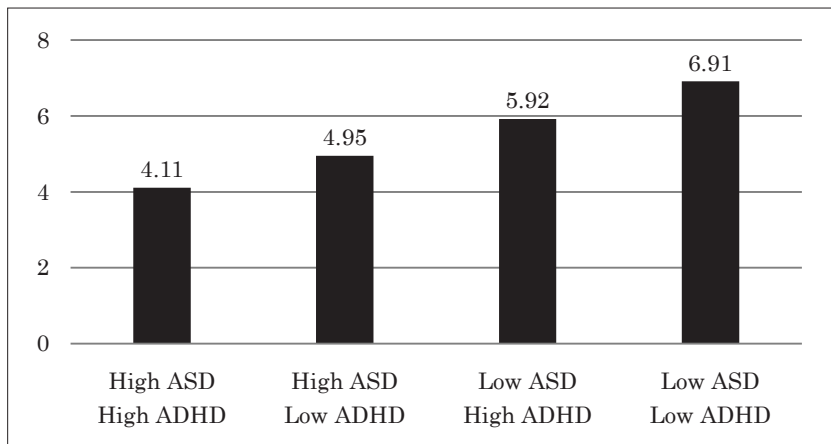


Figure 1 Mean scores for group activities

(2) Peer relationships

The scores for peer relationships were examined by a two-way ANOVA including ASD symptoms (2) and ADHD symptoms (2) as factors. There was the main effect of ASD symptoms ($F[1,245] = 23.78, p < .001$).

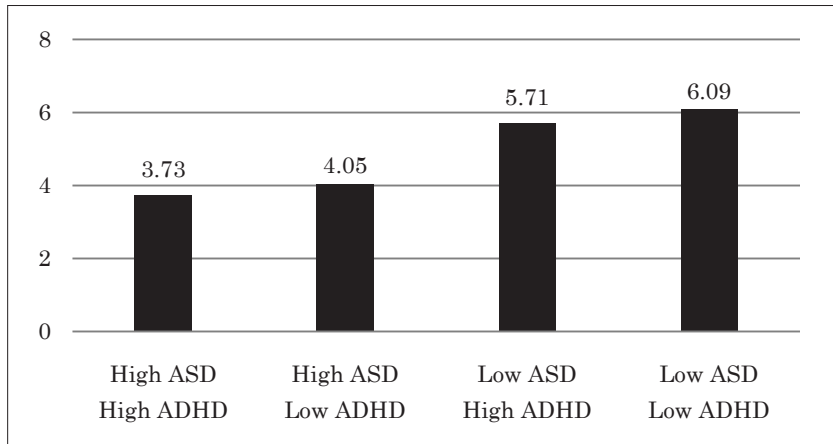


Figure 2 Mean scores for peer relationships

(3) Language development

The scores for language development were examined using a two-way ANOVA including ASD (2) and ADHD symptoms (2) as factors. There was a main effect of ASD symptoms ($F[1,245] = 22.41, p < .001$).

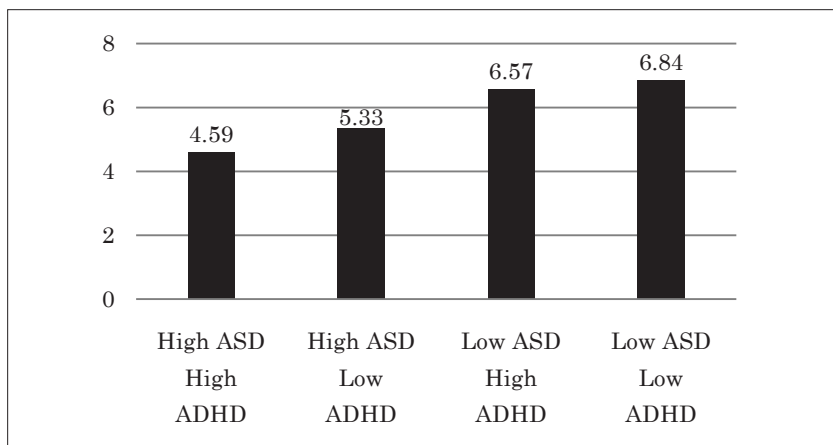


Figure 3 Mean scores for language development

(4) Cognitive development

The scores for cognitive development were examined using a two-way ANOVA including ASD (2) and ADHD symptoms (2) as factors. There was a main effect of ASD symptoms ($F[1,245] = 19.34, p < .001$).

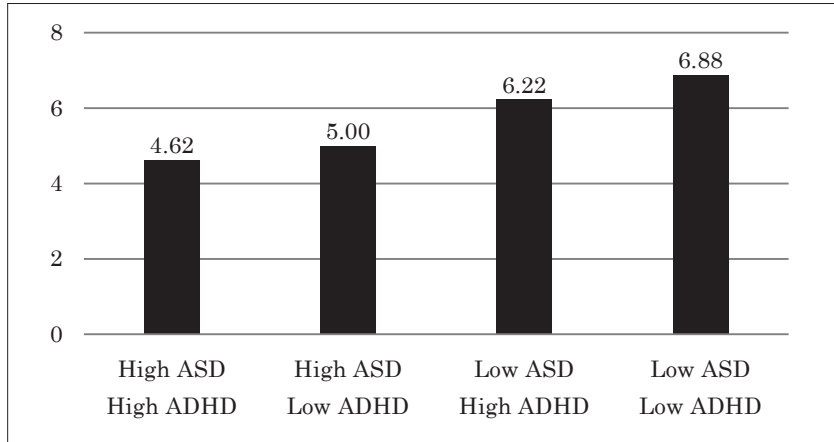


Figure 4 Mean scores for cognitive development

(5) Emotional development

The scores for emotional development were examined using a two-way ANOVA including ASD (2) and ADHD symptoms (2) as factors. There was a main effect of ASD symptoms ($F[1,245] = 45.50, p < .001$).

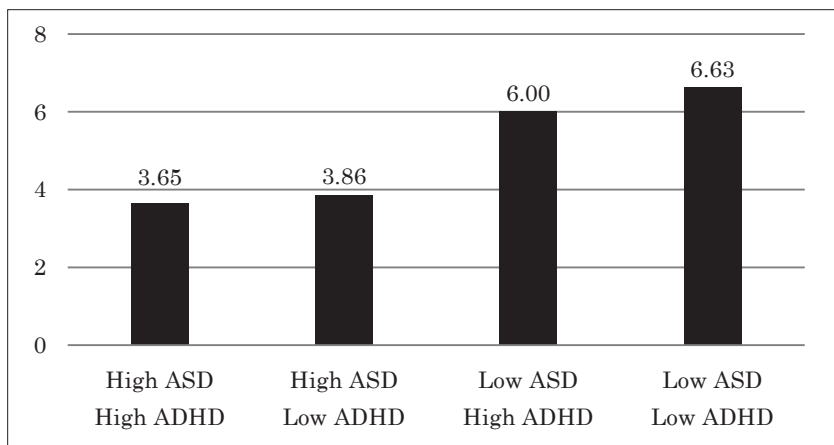


Figure 5 Mean scores for emotional development

3. Scores for each item

The scores for each item were examined using a two-way ANOVA including ASD (2) and ADHD symptoms (2) as factors. There were main effects of ASD symptoms in 46 items. Table 3 displayed the items with large differences between the mean scores of children with high and low ASD symptoms.

There were also main effects of ADHD symptoms in the 10 items. Table 4 displays the items with large differences between the mean scores of children with high and low ADHD symptoms.

Table 3 Differences between mean scores of Low- and High-ASD children

	items	Low ASD (L)	High ASD (H)	(L)-(H)
G5.	He/She can engage in social pretend play with other children.	.84	.41	0.43
E4.	He/She understands the facial expression of "anger," "joy," "surprise," and "sadness."	.86	.50	0.36
E3.	If he/she is praised, he/she is going to be praised more.	.90	.53	0.37
E6.	Even if other children act unpleasantly toward him/her, he/she can control his/her emotions and say, "Please stop it."	.43	.10	0.33
P4.	He/She mutually shows what he/she and his/her friend made.	.84	.52	0.32
P7.	He/She can care for a young child.	.44	.12	0.32
E5.	He/She expresses his/her emotions using words (e.g., "I'm angry").	.71	.40	0.31
L5.	He/She can correctly answer the question, "When you are hungry, what do you do?"	.70	.40	0.30
G3.	He/She can play house by himself/herself.	.85	.55	0.30
P6.	He/She can apologize to other children spontaneously.	.57	.28	0.29
E7.	He/She makes a sad facial expression when he/she listens to sad stories.	.44	.16	0.28
E8.	He/She tries to hide his/her failure from others.	.47	.19	0.28

Table 4 Differences between mean scores of Low- and High-ADHD children

	items	Low ADHD (L)	High ADHD (H)	(L)-(H)
G8.	He/She can concentrate on listening to his/her teachers for about 15 minutes.	.36	.06	0.30
P5.	He/She can wait for his/her turn on a swing by himself/herself.	.70	.45	0.26
E6.	Even if other children act unpleasantly toward him/her, he/she can control his/her emotions and say, "Please stop it."	.44	.22	0.23

Discussion

These results suggested that, in early childhood, children with high ASD symptoms had difficulties in the all domains of social development, especially in peer relationships and emotional development. On the other hand, children with high ADHD symptoms had difficulties in group activities.

There are many children who have difficulty adapting to groups in daycare settings. However, such children show various behaviors. Moreover, even if such children show the same behavior, it is thought that the backgrounds of the behaviors differ. Therefore, to understand the children requiring special care, we must understand not only the children's external behaviors but also their backgrounds. The results of the present study suggested that the "Social Development Checklist-R" was useful for understanding the backgrounds of children requiring special care and creating individual educational programs for them.

References

- Hongo, K., Iijima, N., & Hirakawa, K. (2017). The Social Development of Young Children with Externalizing Behavior Problems. *Annual Bulletin, Graduate School of Education, Tohoku University*, Vol. 3, 1-9.
- Hongo, K., Iijima, N., Takahashi, C., Koizumi, Y., Hirakawa, K., & Kamiya, T. (2015). Development of the Social Development Checklist for Young Children in the Childcare Situation. *Annual Report Graduate School of Education, Tohoku University*, 64(1), 45-58.
- Hongo, K., Iijima, N., Takahashi, C., Koizumi, Y., Hirakawa, K., & Kamiya, T. (2016). Development of "Difficult" Children in Childcare Scenes: Characteristics of "Difficult" Children Identified Using "Social Development Checklist." *Japanese Journal of Clinical Developmental Psychology*, 11, 85-91.
- Hongo, K., Sawae, Y., Suzuki, T., Koizumi, Y., & Iijima, N. (2003). Research on the Behavioral Characteristics of "Difficult Children" and Teacher's Intervention in Nursery Schools. *Japanese Journal on Developmental Disabilities*, 25(1), 50-61.

