

外国語要旨

学位論文題目 Association between ADHD tendency and emotional problems in early adolescents

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The purpose of this dissertation was to investigate the mechanism of the association between Attention Deficit/Hyperactivity Disorder (ADHD) tendency and emotional problems in early adolescents. In Japan, interest in developmental disorders has increased rapidly in various fields such as psychology, education, medical care, and welfare. ADHD is one such developmental disorder. It is characterized by problems of inattention and hyperactivity/impulsivity, which are inappropriate for a person's age and/or developmental level. Children with ADHD often have various psychiatric comorbidities, one among them being emotional problems including depression and anxiety. Not only children diagnosed with ADHD but also children with a higher level of ADHD tendency are likely to have emotional problems owing to the accumulation of various maladjustments and difficulties. To prevent or alleviate emotional problems in children with a higher level of ADHD tendency, it is important to clarify the mechanism of this association.

This dissertation comprised eight chapters. Chapter 1 presented an overview of ADHD including its diagnostic criteria, epidemiology, and comorbid psychiatric symptoms. It also discussed the necessity of focusing on ADHD tendency (including inattention and hyperactivity/impulsivity) as a continuum and investigating the mechanism of association between ADHD tendency and emotional problems. In addition, this chapter mentioned the importance of conducting research on children in the developmental stage of early adolescence. Chapter 2 provided the review of previous studies about the relationship between ADHD tendency and emotional problems including studies on behavioral genetics and analyses focusing on related psychosocial factors. Furthermore, based on the limitations of the previous studies, issues to be addressed in this dissertation were derived. Chapter 3 presented the purpose and composition of this dissertation and the outline of the database used in each study.

The main discourse of this dissertation was divided into Part I (Chapter 4 and 5), which conducted behavioral genetic studies using twin data, and Part II (Chapter 6 and 7), which examined the mechanism of the relationship focusing on psychosocial factors. In Chapter 4, bivariate genetic analysis on the association between ADHD tendency and emotional problems was conducted using data of 787 twin pairs from the fifth grade in elementary school to the second grade in junior high school. As a result, a significant correlation was found between genetics, shared environments, and non-shared environments. It was clear that both genetic and environmental factors contributed to the association of ADHD tendency and emotional problems. In Chapter 5, a longitudinal path analysis was conducted using data of 194 monozygotic twin pairs at two time points, which were the fifth or sixth grades of elementary school (Time 1) and the first or second grades of junior high school (Time 2). To control the

effects of genetic factors, difference scores between two children of identical twins were used in the analysis. As a result, the causal relationship between ADHD tendency and emotional problems was demonstrated. This result suggested that non-shared environmental factors contributed to this causal relationship.

In Chapter 6, two path analyses were conducted to investigate the relationship of ADHD tendency and emotional problems mediated by daily school experiences and self-esteem. First, the analysis using the data obtained from 826 junior school students and 22 teachers revealed that a higher level of ADHD tendency was associated with a higher level of emotional problems via negative aspects of daily school experiences and lower self-esteem. Second, the longitudinal analysis using the data obtained from 202 early adolescents and their mothers revealed that a higher level of ADHD tendency (Time 1: the fifth grade in elementary school) was associated with a higher level of emotional problems (Time 3: the first grade in junior high school) via less positive experiences and more negative experiences at school (Time 1) and lower self-esteem (Time 2: the sixth grade in elementary school).

In Chapter 7, a path analysis was conducted to verify whether not only daily school experiences but also warm parental attitudes toward children mediate the relationship between ADHD tendency and self-esteem in the mechanism demonstrated in Chapter 6. Path analysis using the data obtained from 222 elementary school fifth graders and their parents revealed that ADHD tendency was related to both daily school experiences and warm parental attitudes although only daily school experiences, but not parental attitudes, were related to self-esteem in children.

Chapter 8 summarized the findings in this dissertation. These findings illuminated the necessity of recognizing that children with a higher level of ADHD tendency have a higher risk of emotional problems in terms of both genetic and environmental factors. It was also suggested that providing support to increase positive experiences and decrease negative experiences at school and enhancing self-esteem were important for children with a higher level of ADHD tendency in order to prevent or alleviate their emotional problems. Finally, the significance of this paper including its contribution to relevant research fields and clinical implications as well as the limitation and future research subjects of this dissertation were discussed.