

**Prevalence of comorbid Attention Deficit Hyperactivity Disorder (ADHD) in Chinese
Hong Kong children with Autism Spectrum Disorder (ASD)
A Pilot Cross-sectional Study in a Regional Tertiary Referral Out-patient Clinic**

*Dissertation submitted for the Part III Fellowship Examination 2016
of the Hong Kong College of Psychiatrists*

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Abstract

Background: Comorbid Attention Deficit Hyperactivity Disorder (ADHD) in children with Autism Spectrum Disorder (ASD) was previously not recognized by the Diagnostic and Statistical Manual of Mental Disorders – Fourth Edition (DSM-IV) and the International Classification of Diseases – Tenth edition (ICD-10). There had been new knowledge concerning these two disorders lately, hence the newly published Diagnostic and Statistical Manual of Mental Disorders – Fifth Edition (DSM-5) had finally allowed ADHD to be diagnosed in the course of ASD as a comorbid condition. Early detection is deemed necessary as ADHD is known to be readily responsive to medication and have many serious impacts to the patient and community if untreated. Western studies had found the prevalence to range from 28% to 78%; however, there is a lack of local studies to investigate the prevalence and clinical profile of this group of ASD children with comorbid ADHD.

Objectives: This study aimed to examine the prevalence of comorbid ADHD in ASD children in local tertiary clinic and to explore the clinical pattern in this group of ASD children.

Method: A total of 101 children aged 6-11 years old with ASD diagnosis confirmed with Developmental, Dimensional and Diagnostic Interview (3Di) were recruited and parent-version Diagnostic Interview Schedule for Children-Version IV (DISC-IV) was subsequently administered to assess for comorbid ADHD diagnosis. Dimensional scores of each ASD symptom domains were retrieved from the 3Di. Strengths and Difficulties Questionnaire (SDQ)-parent version was also collected to evaluate subject's other clinical behaviors and impact of the problems. Subject's personal and family socio-demographic data was collected using a demographic questionnaire filled in by the caretaker.

Results: The prevalence of ADHD among children with ASD from my study was 48.5%.

The ASD presentation was unaltered with the presence of comorbid ADHD in this group of ASD children. Hyperactivity and conduct problem were raised while prosocial behaviors, peer problems and emotional problems were not affected with the presence of comorbid ADHD. Impacts in all settings except friendship were higher in ASD children with comorbid ADHD. Only low father's educational level was identified to be associated with comorbid ADHD in ASD children in both univariate and multivariate analyses.

Conclusion: We have concluded that 48.5% i.e. nearly one in every two ASD children that comes to our clinic were suffering from comorbid ADHD. This is significantly higher than the prevalence in local general population. The lack of apparent difference in the clinical presentation in ASD children with or without comorbid ADHD implies imperative need for clinicians to routinely screen for comorbid ADHD in every ASD children that comes to clinic. Low paternal education was found to be significantly associated with comorbid ADHD in ASD children; however as a preliminary study, we did not explore in depth with parental ADHD symptoms and neurodevelopmental history. For future studies, we suggest to explore more into the neurodevelopmental background of families of ASD children with comorbid ADHD, which is believed to be helpful in better understanding of the shared etiological background behind these two related yet distinct neurodevelopmental disorders.