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BRAINCHILD

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Special Issue on Attention Deficit / Hyperactivity Disorder (AD/HD)

香港兒童腦科及體智發展學會
The Hong Kong Society of Child Neurology and Developmental Paediatrics
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SPECIAL ISSUE ON ATTENTION DEFICIT / HYPERACTIVITY DISORDER

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BRAINCHILD – FEBRUARY 2012 ISSUE: Editor's Note

Attention Deficit/Hyperactivity Disorder (AD/HD) in Hong Kong - A Historic Appraisal 2011

Chok-wan CHAN

The current issue of Brainchild is devoted to Attention Deficit/Hyperactivity Disorder (AD/HD) children in Hong Kong. It is the second time that the subject is used as an issue subject; the first one being published in May 2008 subsequent to the launching of the Position Paper on AD/HD in 2007. In this present Issue, we have included original papers to update readers and professionals on progress of our work on the subject. It consists of "Attention Deficit / Hyperactivity Disorder – An Epidemiological Study in Hong Kong from 2003 to 2009" (Dr. LAU, Vanessa, Dr. LIU, Stephenie, Dr. LEE, Florence), "Development of AD/HD service in a Paediatric Department" (Dr. TSUI, Kwong-wan), "Drug Treatment for Attention Deficit / Hyperactivity Disorder" (Dr. LAI, Tony TS), "Attention Deficit / Hyperactivity Disorder – Public Awareness in Hong Kong" (WU, Morris, Dr. LIU, Stephenie) and "The Hong Kong Association for Attention Deficit / Hyperactivity Disorder – Recent Development of a Local Parent Association" (LAU, Joseph). These updates will enable us to visualise our collaborative work, achievements and challenges ahead and will facilitate our strategic planning for the task ahead.

AD/HD has been known to professionals in Hong Kong for more than four decades and drug treatment (Methylphenidate) has been used for more than three decades. However rational approach to orthodox management started only over the past one decade when the Joint Committee for the Promotion of Child Health Service in Hong Kong (JCPCH), formed by the Hong Kong Paediatric Society, the Department of Health of the Hong Kong SAR Government and the Hospital Authority, has been as far back as 2001 to create a Task Force on Mental Health Services for Children in Hong Kong headed by Dr. Ernest Luk (child psychiatrist) and Dr. William Wong (paediatrician) to study mental health problems in this locality. Through the dedicated work of the Task Force, two notable products were achieved: "*The Survey on Mental Health Problems for Children in Hong Kong*" (which revealed major problems including Attention Deficit/Hyperactive Disorder (AD/HD), Autistic Spectrum Disorders (ASD), Specific Learning Disabilities (SLD), Behavioural Disorders, and others amongst our children) and a "*Model for Child Mental Health Services in Hong Kong*". The model proposed to divide childhood mental health services into four levels of care by different professionals (Level I by primary care paediatricians, Level II by child neurologists and developmental paediatricians, Level III by psychiatrists, and Level IV by child psychiatrists under hospital care). The model sets a good prototype for further study and alerts all professionals to line up themselves to make the services effective, efficient, seamless and integrative. Active measures are being undertaken to update paediatricians to take up this challenging and yet important aspect in child health.

This was followed by "*The Hong Kong Society of Child Neurology and Developmental Paediatrics (HKCNDP) Working Group on AD/HD*" established by the Society Council in October 2005, consisting of Professor Patrick Leung (CUHK), Professor Tatia Lee (HKU), Professor Shiu Ling Po (CUHK), Mr. Joseph Lau and Dr. Stephenie Liu (Child Assessment Service), Dr. Catherine Lam and Dr. Chok-wan Chan (HKCNDP). The Group is charged with the terms of reference to equip local professionals in child health with the most up-to-date information and knowledge on the subject so that their work and services can converge well with our child psychiatrists at the tertiary and quaternary levels (service system recommended by Dr. Ernest Luk, Convener of the Task Force for Mental Health Service for Children in Hong Kong). The Group met three times to discuss practical approach, do mapping of local experience and literature, and set recommendations for management of this disorder in Hong Kong with the ultimate target to formulate a position paper to set directions for future services in our locality. In order to bring cutting-edge information to Hong Kong, the Society organised a series of conferences in Hong Kong. This started with the innovative lecture jointly hosted by our Society together with the reputable organisation FOCUS (Focus On Children's Understanding in Schools) on "Advanced Assessment and Treatment of AD/HD" by Dr. Thomas Brown Ph. D., Clinical Psychologist from Yale Clinic for Attention and Related Disorders and world authority on the subject, held on 4th October 2005 in Queen Elizabeth Hospital. This successful kick-off was followed by significant series of scientific activities heading towards professional solidarity on the subject in Hong Kong.

The Hong Kong Society of Child Neurology and Developmental Paediatrics hosted our 2006 Annual Scientific Meeting (ASM) in November 2006 on AD/HD. The Course Director was Professor *Drake Duane MD* of the Institute for Developmental Behaviour Neurology, Arizona State University, Scottsdale, Arizona, USA. Professor Duane is an experienced child neurologist cum developmental paediatrician currently ranked as top world expert in the area of childhood AD/HD in private practice which is appropriate and relevant to upgrade local service standard for AD/HD in the private sector and at primary care level. During the same period, we also hosted our *Joint Meeting on Developmental Paediatrics on AD/HD* with invited experts from the Mainland of China (Beijing, Shanghai, Guangzhou, Chengdu and Chongqing), Hong Kong, Macau, Singapore and Taiwan to share experiences for our children with AD/HD within the Chinese speaking community. The goal was to study the incidence, morphology, genetics and management of children within our region and to identify any special features in children with AD/HD which might be different from our Caucasian counterparts. It is obvious that with all these efforts, we are able to provide optimal management to our children with AD/HD in Hong Kong and within our Region which all child health professionals should strive to achieve!

The Monumental Milestone on the brilliant work of all professionals in Hong Kong was our ability to successfully convince the Rehabilitation Advisory Council of Hong Kong to include AD/HD into the Rehabilitation Planning Programme (RPP) and henceforth AD/HD is officially taken as a disability in Hong Kong. On behalf of our children with this disability, I would like to pay tribute to all members of RPP under the capable of leadership of Dr. York YN Chow, Secretary for Food and Health of the Hong Kong SAR Government, for realising our missions and dreams. Such recognition enables individuals with AD/HD to have access

to accommodation, remediation, compensation, and resources provision at health, medical, education, transport, housing, social (community) and other sectors heavily involved in the care of such individuals.

Encouraged by this success of our work at the RPP and in order to fulfill our promise to the Hong Kong professionals, we successfully published the Position Paper on AD/HD by the Hong Kong Society of Child Neurology and Developmental Paediatrics (HKCNDP) in July 2007. It is most encouraging to witness that the Paper being utilized as an important document by the Hong Kong SAR Government and professionals in Hong Kong for policy making, healthcare finance planning, programmes setting, technical formatting, project implementing and outcome measuring in the future. The Paper sets a good prototype for all child health workers to amalgamate effort of all professionals to achieve powerful advocacy for our children with special needs. It is a worthwhile paper for all readers to scrutinize and to resonate effort for the care of our children!

Additional great achievements consist of inauguration of the "Hong Kong Association for AD/HD" (a powerful parent group as advocate for children with this disability) on 23rd November 2007 and the First Collaborative Project for AD/HD between Paediatricians, Developmental Paediatricians and Child Psychiatrists at the New Territories East Cluster launched in 2007. This sets a good prototype for collaboration and coordination between professional exemplifying interdisciplinary approach to this disability. At the same time, we are pleased to continually receiving reports and updates on the productive work of the HKCNDP Working Group on AD/HD covering domains of service, training, research and advocacy in Hong Kong. The battle is won and the future work for AD/HD is promising!

At the professional level, we are pleased to witness Diploma Courses specially customised to train healthcare professionals to take up Level I and Level II work for AD/HD as presided by the Four-Tier System being organised by the Joint Committee on Mental Health Service in Hong Kong in 2008 and jointly by the Hong Kong Paediatric Society and the American Academy of Pediatrics in 2011. It is most rejoicing for us to witness more than forty local paediatricians being officially trained in the area of AD/HD.

With the upcoming inclusion of AD/HD as an official disability category in RPP, many of the challenges such as public awareness, professional readiness (medical, social and educational interventions), social justice, resources availability and government endorsement, may be given an opportunity for significant breakthrough. Given the multidisciplinary and inter-sectoral nature of official rehabilitation programmes, there is a need for all concerned parties to rapidly arrive at a consensus on the prevention, early identification, effective and timely intervention, and management of potential adverse social outcomes. Organised leadership is needed for developing roadmaps to achieve objectives of different stakeholders, not least those of public offices responsible for much of the work and funding. Listing of AD/HD in the official document will provide an immediate impact on public awareness on the subject, spanning numerous government departments, service providers and interest groups. Official resource support will doubtless provide the much needed incentive for cooperation among key-players.

This is thus a prime opportunity to plan for a coherent and comprehensive schedule for developments in AD/HD work as outlined in Hong Kong's rehabilitation policy with the view of maximising life goals and participation of affected individuals. With AD/HD individuals' innately adequate intelligence and frequent areas of strength as well as the availability of effective interventions, the spirit of Hong Kong's rehabilitation policy can hopefully witness full rewards in this population.

Finally do accept our deepest appreciation for the good work of all responsible professionals and key players for child health in Hong Kong in achieving the top level management and for striving for the welfare and rights for our children with AD/HD. *I wish you all reading pleasure and best of health!*

Dr. Chok-wan CHAN
Editor-in-Chief, *The Brainchild*
President, The HK Society of Child Neurology & Developmental Paediatrics
1st October 2011

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Attention Deficit / Hyperactivity Disorder – An Epidemiological Study in Hong Kong from 2003 to 2009

LAU, Vanessa (Clinical Psychologist), Dr. LIU, Stephenie (Senior Medical Officer), Dr. LEE, Florence (Senior Medical Officer), Child Assessment Service, Department of Health, Hong Kong SAR

Attention Deficit/Hyperactivity Disorder (AD/HD) is the most common neurobehavioural childhood disorder and is among the most prevalent of chronic health conditions affecting school-aged children. The fourth edition of the DSM (DSM-IV), published in 1994, enumerated three subtypes for AD/HD: (a) predominantly inattentive type, (b) predominantly hyperactive/impulsive type, and (c) combined type (which include significant hyperactivity/impulsivity and inattention symptomatology).

The core symptoms of AD/HD include inattention, hyperactivity, and/or impulsivity. The associated behavioural problems are excessive, long term and pervasive. Children with AD/HD are often unable to sit still, plan ahead, finish tasks or follow what is going on around them. They may have significant functional problems, such as difficulties at school, academic underachievement, problematic interpersonal relationships with family members and peers, and low self-esteem (Gentschel & Mclaughlin, 2000; Marshall, Hynd, Handwerk, & Hall, 1997). They also have higher incidence of co-morbid conditions, including specific learning disorder, developmental coordination disorder, oppositional defiant disorder, anxiety and mood disorder.

The present epidemiological study on children with AD/HD is a retrospective study on the patient data collected in the Child Assessment Service (CAS), Department of Health of Hong Kong Special Administrative Region in China from January 2003 to December 2009. The service of CAS covers majority of the population in Hong Kong. There are six assessment centers throughout the territory and the yearly referral is around 8000.

The data included two disorder subgroups i) attention deficit / hyperactivity disorder comprised of predominantly hyperactive-impulsive type and combined type (hereinafter as AD/HD), and ii) attention deficit / hyperactivity disorder predominantly inattention type (hereinafter as ADD) based on the DSM classification system (DSM-IV-TR, 2000). We have also included data on two other "problem-level" subgroups, which conditions do not yet reach clinically disorder level but to a certain extent do affect children's daily functioning, and need further monitoring. They are iii) hyperactive-impulsive problem, and iv) inattention problem.

Demographic Data

In the above seven years period, a total number of 8,444 children were diagnosed to have Attention Deficit/ Hyperactivity Disorder or problem, in which 2,583 children were diagnosed to have AD/HD, 795 were diagnosed to have ADD, 2,611 children were found to have hyperactive-impulsive problem and 2,455 with inattention problem (Fig 1). The rising trend might reflect an increased awareness of parents and professionals, and a better help seeking behaviour.

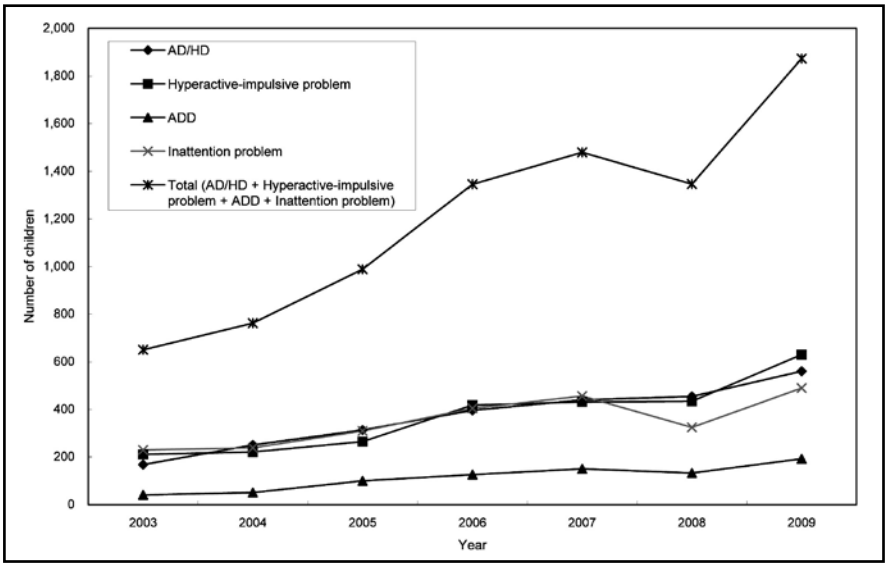

Figure 1. Number of children diagnosed with Attention deficit/hyperactivity disorder (AD/HD), Attention Deficient Disorder and problem

The number of children diagnosed for AD/HD and hyperactive-impulsive problem were similar (Fig 2). For those children with ADD and inattention problem, we had more number in the problem range (Fig 3). This might reflect that ADD is often more difficult to be diagnosed in young children as they often have less clinically significant difficulties compared with the disruptive nature of hyperactive-impulsive behaviour.

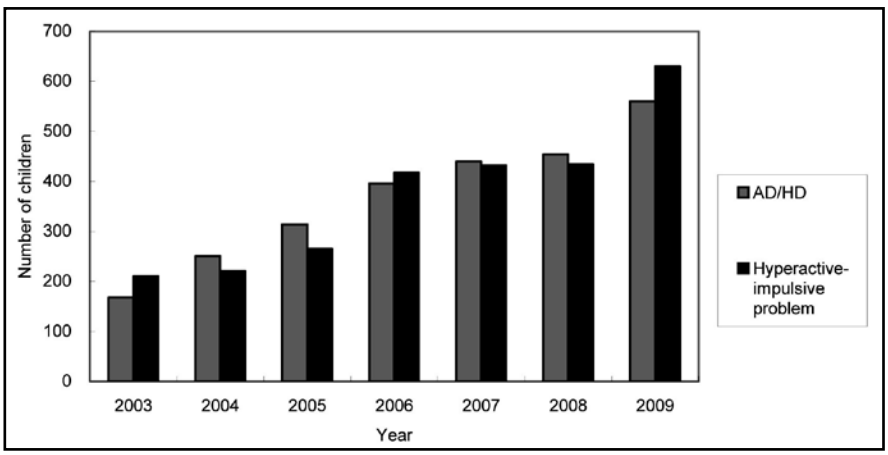

Figure 2. Number of children diagnosed with Attention deficit/hyperactivity disorder (AD/HD) and Hyperactive-impulsive problem

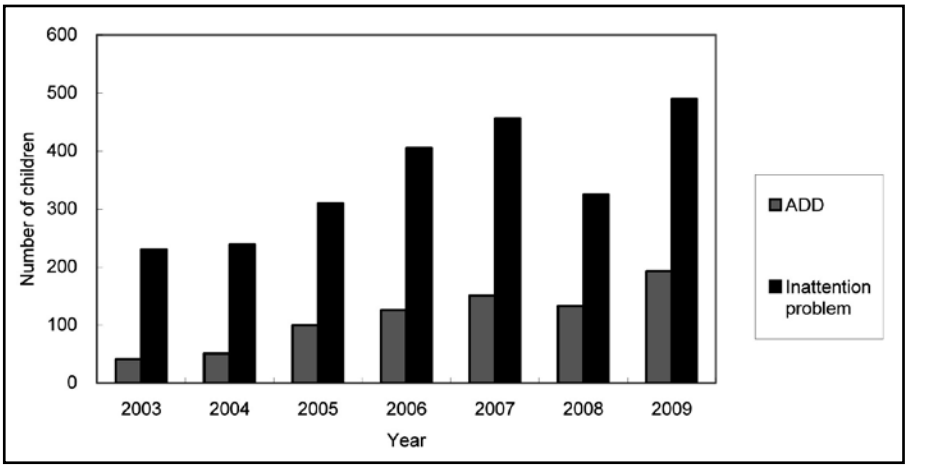

Figure 3. Number of children diagnosed with Attention deficit disorder (ADD) and Inattention problem

Gender Ratio

Overall, the average male-to-female ratio was 4: 1. It was comparable to figures reported in other studies which ranged from 4:1 to 9:1 depending on settings in which data was collected (DSM-IV-TR, 2000). When AD/HD and ADD were scrutinised separately, the ratio is 6.6:1 and 2.6:1 respectively. Similar pattern of difference was observed in hyperactive-impulsive and inattention problems, with ratio of 5.3:1 and 2.4:1 respectively. These figures suggested that boys were more likely to exhibit disruptive behaviour. (Table 1)

Table 1. Demographic Data

	Disorder level AD/HD		ADD		Problem level Hyperactivity e-		Inattention	
	N	(%)	N	(%)	N	(%)	N	(%)
Male	2,240	86.7%	577	72.6%	2,196	84.1%	1,726	70.3%
Female	338	13.1%	218	27.4%	414	15.9%	725	29.5%
Unknown	5	0.2%	0	0.0%	1	0.0%	4	0.2%
Total	2,583		795		2,611		2,455	

Age of diagnosis

About half of these children were diagnosed at their early primary school years, between 6 to 8 years old. For children with disruptive behaviour, more functional difficulties are reported in primary school setting where there is more demand on discipline compared to kindergarten. Thus, more children were referred to our service for assessment when they started primary school. For AD/HD, ADD and inattention problems, the number of cases diagnosed peaked at 7 years to 7 years 11 months. For the hyperactive-impulsive problem, it peaked earlier at 5 years to 5 years 11 months (Fig 4). This is understandable as parents are usually less tolerant of their children's disruptive behaviours than their inattention problem. For those with mainly inattention problem, parents would seek help when their academic performance is being affected in the primary school years. As AD/HD is sometimes difficult to be diagnosed in the preschool years, it is possible that some preschool children with hyperactive-impulsive problem are later

confirmed to have AD/HD as they get into school age.

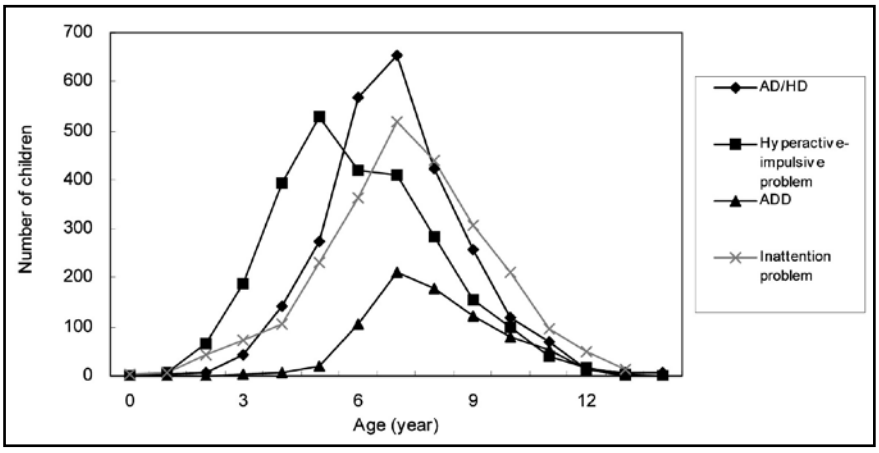

Figure 4. Number of children with AD/HD, ADD, Hyperactive-impulsive problem and Inattention problem by Age of diagnosis

Source of Referral

Private practitioner was the major source of referral representing 39% of the cases referred. This might reflect that parents are becoming more aware of developmental and behavioural problems in their children, and actively seek medical advice and referral for assessment. The Department of Health was another major source of referral accounting for 32% of the cases. Maternal and Child Health Service provides developmental surveillance for early identification of developmental problems in preschool children, while Student Health Service provides regular annual medical checkup for school children. For the children referred by Hospital Authority, the third major referrer, majority of them were referred from the Department of Paediatrics. Other sources of referral included Education Bureau and Social Welfare Department.

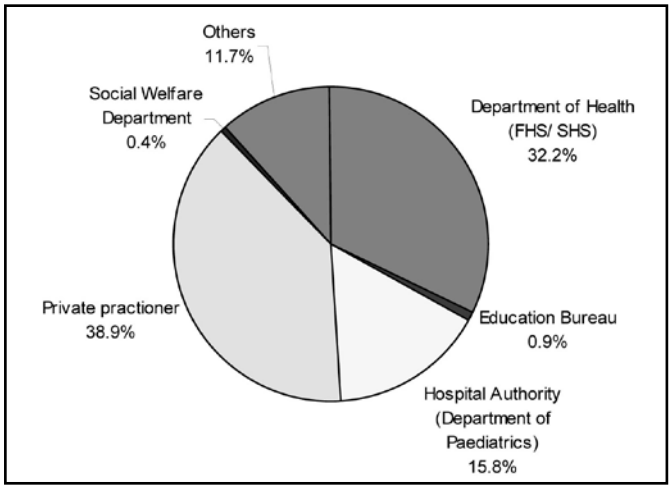

Figure 5. Source of referral

Reason of Referral

In general, emotional / behavioural difficulties and learning problem were the two most common reasons of referral, which comprised 69% of all referrals. The picture is slightly different

when hyperactive-impulsive and inattentive types of problem are examined separately.

For the cases with AD/HD and hyperactive-impulsive problem, 50 - 60% of them were referred because of emotional / behavioural difficulties. Whereas for cases with ADD and inattention problem, learning problem was the most common reason for referral, accounting for 35 - 40 % of the cases (Table 2).

Table 2. Reason of referral

Referrral reason	Disorder level		Problem level	
	AD/HD (n = 2,583)	ADD (n = 795)	Hyperactive-impulsive (n = 2,611)	Inattention (n = 2,455)
	n (%)	n (%)	n (%)	n (%)
Articulation & other speech problems	29 (1.1)	9 (1.1)	49 (1.9)	38 (1.5)
At risk baby (e.g. VLBW)	9 (0.3)	2 (0.3)	14 (0.5)	12 (0.5)
Developmental delay	71 (2.7)	23 (2.9)	191 (7.3)	109 (4.4)
Emotional / Behavior difficulties *	**1,558 (60.3)**	299 (37.6)	**1,333 (51.1)**	751 (30.6)
Hearing problem	21 (0.8)	3 (0.4)	44 (1.7)	35 (1.4)
Language problem	123 (4.8)	32 (4.0)	313 (12.0)	257 (10.5)
Learning problem *	402 (15.6)	**315 (39.6)**	318 (12.2)	**854 (34.8)**
Motor problem	65 (2.5)	31 (3.9)	69 (2.6)	80 (3.3)
Visual problem	3 (0.1)	0 (0)	5 (0.2)	5 (0.2)
Others	302 (11.7)	81 (10.2)	275 (10.5)	314 (12.8)

Co-morbid Condition

Dyslexia, specific language impairment, and developmental coordination disorder were the three most common co-morbid conditions. On the other hand, a relatively small number of cases diagnosed were found to have oppositional defiant disorder (ODD) or conduct disorder (CD) (3 - 7% and 0 – 0.1% over the years respectively). The figures were not comparable to those reported in literature, whereby 30% to 60% of clinic-referred children with AD/HD would meet diagnostic criteria of ODD or conduct disorder CD. (Mash & Barkley, 1996). This might be due to the young age of our sample for which ODD or CD are less frequently diagnosed. It was also noted that the number of Tourette syndrome or tics was also relatively small. (Table 3).

Table 3. Co-morbid conditions

Comorbid condition	Disorder level		Problem level	
	AD/HD (n = 2,583)	ADD (n = 795)	Hyperactive-impulsive (n = 2,611)	Inattention (n = 2,455)
	n (%)	n (%)	n (%)	n (%)
Conduct disorder	3 (0.1)	0 (0)	0 (0)	0 (0)
Developmental coordination disorder*	150 (5.8)	70 (8.8)	72 (2.8)	155 (6.3)
Dyslexia*	790 (30.6)	385 (48.4)	465 (17.8)	916 (37.3)
Emotional problem	76 (2.9)	56 (7.0)	99 (3.8)	147 (6.0)
Oppositional defiant disorder	188 (7.3)	26 (3.3)	162 (6.2)	74 (3.0)
Specific language inpairment*	305 (11.8)	117 (14.7)	533 (20.4)	465 (18.9)
Tourette Syndrome or Tics	11 (0.4)	0 (0)	12 (0.5)	8 (0.3)

Cognitive Profile

There may be a belief that features of AD/HD are more common among talented children with superior intelligence. CAS data showed that, in general, the number of children with AD/HD or ADD was evenly distributed across different levels of intellectual functioning (Fig. 6). About 1.9% of the total number of children diagnosed was found to have very superior IQ, and the figure was comparable to 2.2% as in the general population.

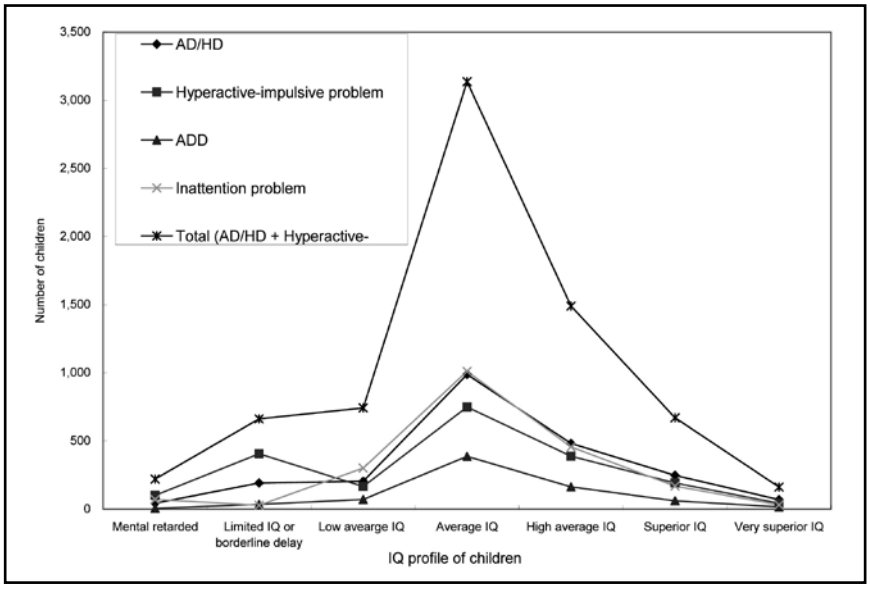

Figure 6. Cognitive profile

Management

In CAS, after comprehensive assessment, we provide interim support services for parents of children with AD/HD and ADD. AD/HD Information Days give information on clinical presentation, aetiology and treatment options of the disorder, available school support and community resources. There are also parenting groups to help the parents with skills in handling children with disruptive behaviour. Community resources, including AD/HD parent association, would also be introduced to parents.

For children diagnosed with AD/HD and ADD, 85.9 % and 82 % respectively were referred to child psychiatric service for further evaluation and long term management. These children were likely to have adjustment or learning problems at school, and around two third of them (61.8 % for AD/HD and 65.3 % for ADD) were referred to educational psychologist for behavioural and educational support in school. Compared to AD/HD, children with ADD were more common to have learning problem as the referral reason (Table 2) and associated with dyslexia (Table 3), more of them were referred for intensive remedial service at school, compared to children with AD/HD. For those at problem level, a less percentage experienced functional difficulties and needed referral for child psychiatry and educational psychologist services. (Table 4)

Table 4. Management

	AD/HD		ADD		Hyperactive -Impulsive problem		Inattention problem	
	N	(%)	N	(%)	N	(%)	N	(%)
Total	2,583		795		2,611		2,455	
Child psychiatric service	2,220	85.9%	652	82.0%	1,046	40.1%	481	19.6%
Educational psychology service	1,596	61.8%	519	65.3%	936	35.8%	1,137	46.3%
Intensive remedial service	796	30.8%	346	43.5%	585	22.4%	949	38.7%

Conclusion

The present data shows that AD/HD is a condition commonly found in school-aged children. If the condition is not recognised and well treated, the impact on the child's academic performance, social life, and adjustment at school, and on their families could be detrimental. The rising number of children being diagnosed over the years reflects that medical professionals, parents and teachers are more aware of the condition. Extra manpower and resources are definitely needed in order to provide treatment and support for this group of children and their families. Timely and multimodal treatment support is considered utmost important to improve the prognosis and reduce co-morbidities. Further study on developmental profile and needs of this group of children in local setting can certainly help in future service planning.

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Development of AD/HD service in a Paediatric Department

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Background

Attention deficit / hyperactivity disorder (AD/HD) is one of the most common behavioural problems in children. The prevalence rate of AD/HD among primary one Chinese schoolboys was 8.9% from data published in 1996(1). More recent local study on prevalence of DSM-IV disorders in Chinese adolescent showed that 3.9% of Form 1 to Form 3 secondary school students had features of AD/HD with functional impairment (2). In addition to the developmental nature of AD/HD, studies on neuroimaging, molecular genetics and pharmacology show the disorder is not purely a social construct but bears a strong biological basis for its pathogenesis. Affected children presents with three core symptoms of AD/HD, namely inattention, hyperactivity and impulsivity. Clinical features of these core symptoms are described in DSM-IV (Table 1) and ICD 10, which are commonly used as clinical criteria for making a diagnosis. Pervasiveness is an important diagnostic feature that problems are seen consistently at home, in school and social situations. As consequence, these children have school failure, relationship problems with parents, siblings, teachers and peers, increased incidence of accidents and oppositional behaviours. Co-morbidities are highly common in AD/HD including dyslexia, other specific learning disorders, motor incoordination, anxiety, depression and oppositional defiant disorder. Patient will not grow out of AD/HD and more severe problems may develop in teenage and young adult life, such as conduct problems, low academic achievement, substance abuse, antisocial behaviours, relationship problems and unemployment in adult life. Diagnosis of AD/HD is essentially clinical. Doctors should gather information about patients' symptoms in different settings from multiple sources, such as parents, care givers and teachers. Presence of functional impairment is an important diagnostic feature and should not be overlooked. There are questionnaires and rating scales available to assist in making a diagnosis but they cannot replace the importance of a clinician with good interview skill and sound knowledge.

Table I: DSM – IV criteria of attention deficit hyperactivity disorders

A. Either (1) or (2):

(1) Six (or more) of the following symptoms of inattention have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:

Inattention

- Often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities
- Often has difficulty sustaining attention in tasks or play activities
- Often does not seem to listen when spoken to directly
- Often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace (not due to oppositional behavior or failure to understand instructions)
- Often has difficulty organising tasks and activities

- Often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)
- Often loses things necessary for tasks or activities (e.g. toys, school assignments, pencils, books, or tools)
- Is often easily distracted by extraneous stimuli
- Is often forgetful in daily activities

(2) Six (or more) of the following symptoms of hyperactivity - impulsivity have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:

Hyperactivity

- Often fidgets with hands or feet or squirms in seat
- Often leaves seat in classroom or in other situations in which remaining seated is expected
- Often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness)
- Often has difficulty playing or engaging in leisure activities quietly
- Is often "on the go" or often acts as if "driven by a motor"
- Often talks excessively

Impulsivity

- Often blurts out answers before questions have been completed
- Often has difficulty awaiting turn
- Often interrupts or intrudes on others (e.g., butts into conversations or games)

B. Some hyperactive-impulsive or inattentive symptoms that caused impairment were present before 7 years.

C. Some impairment from the symptoms is present in two or more settings (e.g., at school [or work] and at home).

D. There must be clear evidence of clinically significant impairment in social, academic, or occupational functioning.

E. The symptoms do not occur exclusively during the course of a Pervasive Developmental Disorder, Schizophrenia, or other Psychotic Disorder and are not better accounted for by another mental disorder (e.g. Mood Disorder, Anxiety Disorder, Dissociative Disorder, or a Personality Disorder).

The Multimodal Treatment Study of Children with AD/HD, MTA study (1999) proved that medication was highly effective in treatment of ADHD. Drug treatment improved the AD/HD symptoms of patients with or without simultaneous behavioural management (3). Medication is recommended for treatment of moderate to severe AD/HD symptoms or for patients with mild symptoms but no response to behavioural management.

In 2000, American Academy of Pediatrics published two sets of clinical practice guidelines for primary care paediatricians on management of children with AD/HD. The first one was intended for diagnosis and evaluation while the second set addressed the issues on treatment of AD/HD. It was recommended that primary care paediatricians and family physicians should initiate

evaluation for AD/HD in children who presented with inattention, hyperactivity, impulsivity, academic underachievement or behavioural problems. The primary care clinicians should then establish treatment programs, including medication and /or behavioural therapy. Regular follow up should be provided for monitoring of target outcome and treating side effects (4,5). More recently in 2008, National Institute of Clinical Excellence (NICE) also established guideline on diagnosis and management of AD/HD in children mentioning that diagnosis should only be made by a specialist psychiatrist, paediatrician or other healthcare professional with training and expertise in the diagnosis of AD/HD (6). With adequate training and medication being evidence-based, paediatricians should play a role in management of children with AD/HD.

Task Force on Mental Health in Children of Hong Kong proposed a four-tier service model for Child and Adolescent Mental Health Service. Paediatricians provide care for children with mental health problems at the tier 2 level (may be tier 3 level with appropriate training), while the child psychiatrists serve at tier 3 and 4 levels for taking care of the more complex behavioural and psychiatric problems.

Pilot Program for Children with AD/HD in New Territories East Cluster

In view of the large case volume, diversified clinical complexity and limited resources, a well-coordinated service is essential to avoid duplication of service and to ensure patients of different complexity being managed at the most appropriate tier of care. A new service model through collaboration among Paediatric Department, Child Assessment Service (CAS) and Child Psychiatric Unit was proposed. Clear role delineation is emphasised under this service model. CAS provides comprehensive assessment for diagnosis of AD/HD and other co-morbid conditions. Triage of patient is done at the level of CAS when the diagnosis is made (see below for details of patient triage). For uncomplicated cases, paediatricians provide medical care at tier 2 level with major role in initiation of medication, monitoring of response and side effects (Table II). Patients under paediatric care showing unsatisfactory response to medication or developing severe co-morbidities will be referred to child psychiatrist for further management. Child psychiatrist supports this service model at third and fourth tiers for patients with severe symptoms, significant co-morbidities and complicated family / social background.

Table II: Role of Paediatrician

1. Diagnosis of AD/HD by checking the compatible features and presence of impairment;
2. Screening of co-morbidities;
3. Exclusion of organic causes for poor attention, e.g. obstructive sleep apnoea syndrome and allergic conditions;
4. Initiation of medical treatment, monitoring of response and side effects;
5. Look out for later development of other behavioural and psychosocial problems;
6. Counseling on parenting skill and behavioural management;
7. Coordinate parents training and behavioural training for patients.

Patient Triage and Care Path

An agreed triage criteria was developed so that patients with different complexity of problems will be identified and seen by either paediatrician or child psychiatrist. (Table III) CAS categorises patients using the triage criteria and an algorithm (Figure 1) is followed for the subsequent care path. Patients without complicated issues (defined as usual cases) will be referred to Paediatric Department if their parents agree for drug treatment. This ensures the best use of paediatric quota as the role of paediatrician under this model emphasises mainly on medical treatment of AD/HD. For patients whose parents decline medication, education and training will be continued in CAS and they will be referred to child psychiatrist as previous practice. In view of the long queuing time for Child Psychiatric service, patients with severe problems will be referred simultaneously to Paediatric Department and Child Psychiatric Unit. With such arrangement, paediatrician can provide initial assessment and start medication as interim treatment. If patient's condition warrants more intensive management, paediatrician will recruit help from child psychiatrist for early treatment before severe problems further deteriorate. In case of urgent problems, there is an agreed mechanism that staff of CAS will directly contact child psychiatrist for taking over of patient for early / urgent intervention.

Table III: Triage Criteria

Usual cases

- Confirmed diagnosis of AD/HD
- Without severe/urgent problems as listed below
- Include significant co-morbidity related to specific learning disorders, development coordination disorder and other related medical condition, e.g. tics and epilepsy.
- Family and school being relatively supportive

Severe problems

- Significant co-morbidities, related to anxiety, mood disorders, oppositional defiant disorder and conduct disorder
- School refusal or exclusion
- Features of pervasive developmental disorder
- Potential child abuse or domestic violence
- Parent(s) with psychiatric illness
- Dysfunctional family

Urgent problems

- Presence of behaviour that endangers life of the child or other family members
- Severe conduct disorder that leads to violation of law
- Presence of child abuse or domestic violence
- Suicidal thought in child or family members

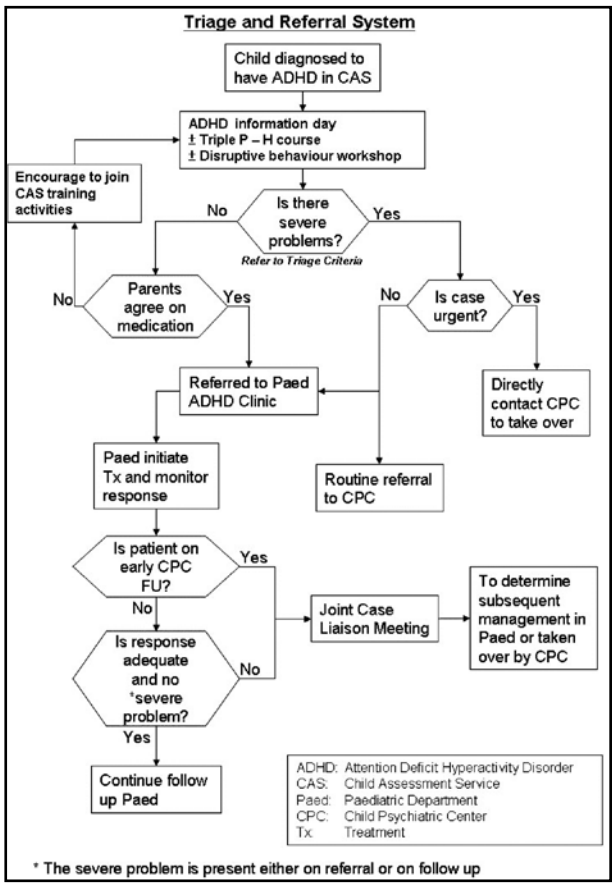

Figure 1. Triage and Referral System for NTEC Paediatric ADHD Service

Training of Paediatric Staff

Not until recently, there is structured training course for paediatricians on comprehensive management of children with AD/HD. Before commencement of this pilot service in NTEC a few years ago, the paediatric doctors and nurses acquired knowledge and experience from various activities, such as clinical attachment at CAC and Child Psychiatric Unit, attending the training workshop for parents of AD/HD patients and overseas training course on Developmental and Behavioural Paediatrics. There is also resource library set up in the Department of Paediatrics containing publications on AD/HD, other behaviour problems in children and parenting skills. This serves as important learning resources for both paediatric staffs as well as the parents, who are allowed to borrow the books for reading.

Choice of Drugs

Although a wide range of choice for stimulant and non-stimulant drugs is available in international market, choices are quite limited locally in Hong Kong. In Hospital Authority (HA) hospitals, we have either methylphenidate as the stimulant or atomoxetine as the non-stimulant. Ritalin is a short acting preparation of methylphenidate while Concerta is the prolonged release form. As cost-effectiveness is an important factor in consideration for drug choice, Ritalin is the first line treatment in this service model for AD/HD children. Concerta and atomoxetine

are reserved as second line treatment or they will be prescribed as self-financed items according to preference of patients. Internal Department guideline on use of AD/HD medications was established on indication, choice of drugs, monitoring and management of side effects.

Clinic Operation

Diagnosis of AD/HD is clinical and depends on good history taking. Behavioural symptoms of AD/HD manifested by the patient at different settings should be asked. It is sometimes necessary to obtain information from sources other than parents, e.g. teachers and caregivers. The process can be time consuming and sufficient consultation time should be allowed without interruption for seeing AD/HD patients. Diagnostic questionnaire and rating scale should not be used alone to make a diagnosis but they can serve as good references to assist in diagnosis and monitoring of progress. In our setting, the Vanderbilt AD/HD rating scales for parents and teacher are used for assessment at initial diagnosis and subsequent monitoring.

Besides AD/HD symptoms meeting the DSM IV criteria, it is important to look out for impairment of functions in two or more settings, e.g. home and school. AD/HD is common to have co-morbidities, including dyslexia, other specific learning disorders, motor incoordination, oppositional or conduct problems, anxiety and depression. Co-morbid conditions will be screened during the clinic visit. Past health will be asked, especially tics, seizure, gastrointestinal problem and cardiac disease. Information on appetite, sleep habit and recurrent symptoms (such as headache and abdominal pain) is obtained as baseline for monitoring of adverse drug effects. Blood pressure, body height and weight are recorded for every outpatient visit. Observation of the children's behaviour in consultation room is not only helpful in making the diagnosis of AD/HD, but provides useful clues suggestive of other possible diagnoses, such as autistic spectrum disorders, anxiety and tics disorder. Phone interview of school teacher is sometimes needed when parents cannot produce adequate information about school behaviours. On physical examination, particular attention will be paid to cardiovascular system and neurological examination, including vision and hearing, motor incoordination and dyspraxia. More information can be obtained from reviewing patients' homework, examination papers, dictation books, school diary and school report. ECG is performed at first visit for possibility of undiagnosed cardiac arrhythmia and features of structural heart abnormality, in which stimulant is contraindicated.

Psychoeducation on AD/HD, medication and side effects are provided after formulation of patient's clinical problems. It is important to emphasise to parents that direct therapeutic effects of medication is on the three core symptoms of AD/HD only. Other behavioural and learning problems should improve secondarily to reduction of AD/HD symptoms instead of direct pharmacological action of the drug.

Initiation of medication follows the general principle of "Start Low and Go Slow". Either methylphenidate or atomoxetine will be started at low dose and gradually titrated up to avoid excessive side effects, which can adversely affect patients' early experience of drug and their later compliance to medication.

Response is monitored by interview of patient and parents, and Vanderbilt rating scales for parents and teacher. Parents' or caregivers' account on behaviour of the patients at home, in school and other situations are used to judge the effectiveness of drug and show the need to escalate dosage. Older children can report their response to medications and their concerns is also taken into account before making decision related to drug use. Teacher's report is usually obtained through the Vanderbilt rating scale and direct contact of teacher is sometimes needed for better understanding of the patient in school environment.

The Vanderbilt follow-up rating scale includes a checklist on side effects of drug but direct questioning is equally important for clarification and details. Other parameters, such as weight, height and blood pressure, are measured every clinic visit. Presence of any side effects will be managed accordingly.

Parent support

Parental support is an important aspect in the management of children with AD/HD and is provided through individual counseling at clinic session, provision of educational materials and organisation of parent sharing workshop.

Parent sharing workshop is organised regularly to promote parents' knowledge on AD/HD, understanding the use of medication and behavioural management and close collaboration with school. Speakers from different disciplines, including paediatricians, clinical psychologist and representative of Education Bureau, are invited to deliver lectures and answer questions from parents.

There are posters and books on display at the clinic as educational materials for improvement of parents' knowledge on AD/HD, parenting skill and behavioural management.

Review and Monitoring of Service

Regular joint case liaison meeting, involving paediatricians, developmental paediatricians and child psychiatrist, is held regularly every three months for discussion of cases with management problem, formulation of management plan and review of operational issues. The meeting also serves as a platform for sharing of experience and knowledge among members.

Results

The paediatric AD/HD service of Alice Ho Miu Ling Nethersole Hospital commenced in November 2007. Until June 2010, a total of 99 children were seen for AD/HD. 85% of patients were put on medication and 80%, 15% and 5% of them were prescribed Ritalin, Concerta and Strattera (atomoxetine), respectively. Over 90% of parents reported positive response to treatment and the side effects reported were minor ones. Co-morbidities were not uncommon among our patient group and 70% of them had dyslexia (36%), other learning difficulties (22%), motor incoordination (13%), ODD/CD (8%), autistic spectrum disorders (7%) and anxiety (3%). Seven patients (7%) had co-morbidities that were severe enough for early child psychiatric referral (3 with ASD, 1 with GAD, 1 with severe ODD and 2 with emotion disturbances). These figures reflected the importance of tertiary child psychiatric support in the current service model.

Service Enhancement

Early this year, there is planning for enhancement of service for children with AD/HD in NT East Cluster by expansion of the multidisciplinary team. There is greater involvement of paediatricians, more support from child psychiatrists and streamline of the triage and booking process. Behavioural treatment and patient training are also strengthened with specific programs provided by occupational therapists and clinical psychologists. With support from the hospital administrators, this service enhancement has been implemented with the aims to significantly increase the AD/HD case intake and to improve the service quality by providing a more comprehensive care.

Conclusion

AD/HD is a common behavioural problems presented in childhood. Early intervention can improve outcome and reduce society burden for managing the more severe psychosocial consequences. With appropriate training, paediatricians can take an active role in the management of children with AD/HD. A service model as presented through collaboration with other disciplines, especially child psychiatrist, is effective in terms of response to treatment and parents' satisfaction. As medical assessment of AD/HD can be a complex process due to frequent co-morbidities and high case volume, strain on medical manpower is significant. A multidisciplinary team (including clinical psychologist, occupational therapist, social worker and trained nurse specialist) is required as patients and parents often need counseling, training and psychological support. In order to provide a sustainable service for timely intervention to these patients, additional resources are necessary to meet the large case load and the demanding multidisciplinary approach on management of AD/HD.

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Drug treatment for Attention Deficit / Hyperactivity Disorder (AD/HD)

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AD/HD is a common disease entity in child psychiatry. The prevalence of AD/HD is approximately 3 to 10% (1,2). Children with AD/HD have symptoms of inattention, hyperactivity and impulsivity. The severity of the symptoms and the presentation may change with age. Problems of hyperactivity and impulsivity are commonly seen in younger children but inattention symptoms are more prevalence in adolescents with AD/HD (3). Symptoms of AD/HD may lead to adverse consequences not only on one's social but also educational (4), and family functioning. They have a higher risk of substance abuse and delinquency. Therefore, early recognition, diagnosis and treatment are important for the well being of this group of patients.

The mainstay of treatment for AD/HD is a combination treatment approach including both pharmacological and behavioural treatment as evidenced by recent multi-centres study (5). It was the largest study on the treatment of children with AD/HD. It involved 579 subjects divided into four treatment arms: pharmacotherapy alone, behavioral treatment alone, combination treatment and routine community care group. The 14-month follow-up results showed pharmacotherapy alone and combination treatment group were both clinically and statistically superior to behavioural treatment alone group. It also showed that combination treatment group did not have significantly greater advantage than pharmacotherapy alone group for core symptoms of AD/HD, but may provided greater benefit for non-AD/HD symptoms and positive functioning outcomes. However, this article will only focus on pharmacological treatment of AD/HD but not other treatment modality.

The most commonly used medication in treating AD/HD is stimulants. It blocks the re-uptake of norepinephrine and dopamine into the presynaptic neuron. This increases the release of monoamines into the extra neuronal space. There are different preparations including immediate release, extended release and long acting forms. These medications are shown to be effective in about 75% of patients (6).

The immediate release preparation (ritalin) has a rapid onset of action and is usually seen 30 minutes after ingestion. However, its efficacy only lasts for about three to four hours (7). Multiple daily dosing is required to have good symptom control throughout the day (8). The drug compliance in taking this form of medication is usually not satisfactory particularly among adolescents. They may forget the noon dose. Sometimes they are reluctant to take the medication because they feel being stigmatised. Some of the patients may have breakthrough symptoms in between two doses of medication. The extended release preparation could last up to eight hours but usually not long enough to cover their whole day activities. They may have problems in after-school activities namely tutorial class or inside school bus on their way back home.

The long acting preparation (Concerta) has two components within the structure namely initial rapid release and the sustained release compartment. The initial rapid release compartment could maintain its rapid onset of action and the sustained release compartment then provide the long lasting effect. It could last up to twelve hours and once daily prescription is adequate. It has a peak plasma concentration at six to eight hours. It helps to improve concentration, decreases impulsiveness and features of hyperactivity in children and adolescents with AD/HD. The efficacy is comparable to that of immediate release preparation (9). The noon or after school dosing is no longer required so as to improve the drug adherence. However, its adverse effect may also last longer than the immediate release preparation. Reduction in oral intake during lunch or tea time is most commonly reported by the patient.

Common side effects of stimulant include appetite suppression (which may lead to weight loss), sleep disturbance, headache, stomach ache and irritability. These side effects are usually mild, short-lived and responsive to dosing and timing adjustment. There has been concern that stimulants may pose an increase risk of substance abuse. Long-term studies suggested that stimulant therapy in childhood was associated with a reduction in the risk for subsequent drug and alcohol use disorders. Substance use disorder was more prevalent in untreated AD/HD patients (10). Height, weight and blood pressure should be regularly monitored during follow-up. There is no study examine the effects of doses of methylphenidate of more than 60mg or Concerta more than 72mg per day. Dose in these ranges should be carefully monitored and looked out for any adverse effects. Previous studies stated that the use of stimulant was related to the development of tics (11). However, recent meta-analysis showed there was no worsen of tics symptoms in patient taking stimulants (12).

Stimulants are usually prescribed to children aged 6 or above. Some studies suggested the use of stimulant in children below this age (13). Study funded by NIMH Preschool AD/HD Treatment Study (PATS) showed that stimulant was effective in preschooler with AD/HD (14). The dose of stimulant used was found to be lower than that used in Multimodal Treatment Study of AD/HD (MTA). They also reported to have higher rate of adverse effects including irritability and prone to crying. The use of stimulant in children below six should be more conservative and better use a lower treatment dose.

There is also non-stimulant for the treatment of AD/HD. Atomoxetine is the first non-stimulant that has been approved by FDA for the treatment of AD/HD. It is a norepinephrine re-uptake inhibitors that blocks presynaptic uptake at noradrenergic neurons. It helps to improve both attention and impulse control. Study showed that the greater effects were observed at week 6 suggesting that patient should take the drug for a few weeks to gain a full therapeutic effect (15). Another study showed it was useful in treating patient with AD/HD comorbid anxiety disorder (16). As it is a non-stimulant, it does not have a potential for abuse. It also has lesser effect in affecting appetite and sleep as stimulant. It has a long duration of action and could prescribe once daily. Adverse effects include drowsiness, stomach ache, increased heart rate and blood pressure.

Direct comparisons of the efficacy of atomoxetine with methylphenidate showed a greater treatment effect with stimulant. Meta-analysis showed the effect size for atomoxetine was 0.62

compared with 0.91 for immediate release and 0.95 for long acting preparation of stimulant (17).

The tricyclic antidepressants can also be used in treating AD/HD particularly for those with co-morbid anxiety or depression (18). Imipramine and nortriptyline are the most commonly used for this purpose. Electrocardiography must be performed at baseline and after dose adjustment to look for any cardiac adverse effect.

Bupropion and alpha agonist could also be used although they are not approved by the FDA. There were double-blind, randomised controlled trial to show their usefulness but not up to the level required by the FDA. These should only be used as a second-line treatment (19).

Bupropion is a noradrenergic antidepressant that acts on dopamine and norepinephrine pathway. Study showed it had a modest effect in the treatment of AD/HD but was contraindicated in patient with a current seizure disorder (20). Adverse effects include increase in irritability, poor sleep and decrease in appetite.

Clonidine is an alpha-agonist used in the treatment of AD/HD with co-morbid aggression, tics or insomnia by stimulating inhibitory presynaptic autoreceptors in the central nervous system. It has a short half-life and need to take multiple daily doses. Studies suggested that it was more effective in treating hyperactive/impulsive symptoms than inattention symptoms (21). Adverse effects include postural hypotension and sleepiness.

Conclusion

AD/HD is a complex disease with variable presentation and has high rate of co-morbidity. It is biological in nature and could manage effectively by the use of pharmacological treatment. Among various forms of medication, stimulant is the first line treatment with highest efficacy and tolerability. Non-stimulants could be used for patient with resistant symptoms or intolerance to stimulant. They could also be used in patients with co-morbidity. Early diagnosis and treatment for AD/HD is benefit to the well being of children and adolescent with AD/HD.

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Attention Deficit / Hyperactivity Disorder – Public Awareness in Hong Kong

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In order to understand the public awareness of children with special needs in Hong Kong, the Child Assessment Service (CAS) of Department of Health has commissioned the Hong Kong Census and Statistics Department to conduct a Thematic Household Survey (THS) in 2007-08.

In the survey, 8,096 households were successfully enumerated and the respondents, who had to be aged 18 or above, were asked about their awareness of different types of childhood developmental disability. Further views on and attitudes towards four selected disabilities, including mental retardation (or mental deficiency); autism spectrum disorder (or autism); attention deficit / hyperactivity disorder (AD/HD) and dyslexia were also collected.

Public Awareness

The survey showed that 4,515,400 respondents (82.9%) had heard of AD/HD which put AD/HD at the fifth place among the ten commonly seen childhood developmental disabilities, while autism spectrum disorder (or autism) (91.1%) and cerebral palsy (48.4%) were at the top and bottom of the list (Table 1).

Table 1. Persons aged 18 and over by whether had heard of different types of childhood developmental disability

Whether had heard of different types of childhood developmental disability #	No. of persons ('000)	%
Yes	5 156.1	94.7
Rank 1: Autism spectrum disorder (or autism)	*4 958.5*	*91.1*
Rank 5: Attention deficit/hyperactivity disorder	*4 515.4*	*82.9*
Rank 10: Cerebral palsy	*2 636.4*	48.4
No	288.1	5.3
Total	5 444.2	100

Note: # Multiple answers were allowed.

Source: Census and Statistics Department. Thematic Household Survey Report No.34: Public Awareness and Attitudes towards Developmental Disabilities in Children. Hong Kong: Census and Statistics Department; 2008.

Public Misconception

The public also showed a range of misconceptions about children with attention deficit/hyperactivity disorder (AD/HD) (Table 2). The most common misconceptions are "AD/HD can only found in children" (33.2%) and "Children with AD/HD are actually gifted, and this explains for their lack of desire to attend ordinary class and inability to sit properly in class" (33.2%).

Table 2. Incorrect response on the statements regarding attention deficit/hyperactivity disorder (AD/HD)

Statements regarding AD/HD	Response-Incorrect*
AD/HD can only be found in children (False statement)	33.2%
Children with AD/HD are actually gifted, and this explains for their lack of desire to attend ordinary class and inability to sit properly in class (False statement)	33.2%
Children with AD/HD are only more active or less attentive than others. These features will disappear when they grow up (False statement)	29.0%
Children who can sit down properly and focus their attention during TV game playing will not have the problem of AD/HD (False statement)	23.1%
Lack of parental discipline is the major cause of AD/HD in children (False statement)	13.0%

Note: *Those strongly agreed / agreed to a false statement and strongly disagreed / disagreed to a true one are both regarded as having incorrect response on that aspect.

Source: Census and Statistics Department. Thematic Household Survey Report No.34: Public Awareness and Attitudes towards Developmental Disabilities in Children. Hong Kong: Census and Statistics Department; 2008.

Public Acceptance

When compared to children with dyslexia or autism spectrum disorder or mental retardation, the survey showed that the public least agreed to accept "their children to have classmates with AD/HD" (74.2%); and to accept "a child with AD/HD as neighbour" (79.5%) (Table 3).

Table 3. Accepting response on statements regarding integration by type of disability

Statements regarding integration	Accepted (%)			
	AD/HD	Dyslexia	Autistic spectrum disorder	Mental retardation
Whether agreed that children with that disability was suitable for attending mainstream primary schools	48.9	48.4	45.3	28.4
Whether accepted their children had classmates with the disability	74.2	87.0	82.7	80.3
Whether accepted the children with that disability as neighbours	79.5	94.0	90.3	89.6
Whether would agree to let relatives and friends know the condition of their children if their children were with that disability	95.0	95.0	94.3	94.2

Source: Census and Statistics Department. Thematic Household Survey Report No.34: Public Awareness and Attitudes towards Developmental Disabilities in Children. Hong Kong: Census and Statistics Department; 2008.

Discussion

Public awareness of AD/HD is still limited despite its high prevalence, implication on multiple aspects of life and availability of effective treatment. Misconception is common and public acceptance is the worst among other developmental disabilities. More public education is definitely needed to enhance the public awareness and acceptance, and dispel misconceptions.

In view of these findings, the Child Assessment Service has launched a series of programs for public education on developmental disabilities in 2009. It included the publication of a series of articles on developmental disabilities including AD/HD in the newspaper AM 730; production of 10 half-hour TV programs (天下父母心) on different developmental disabilities by RTHK (Radio Television Hong Kong) which were broadcast in ATV (Asia Television Ltd.) Home; and finally collaboration with the Education Bureau in running a competition on creating videos to be broadcast in school on accommodation of children with special education needs (「共融校園一一切由心開始」短片創作比賽及「愛心小主播」). With these efforts and other work in the society, it is hope that the public awareness and acceptance of children with AD/HD could be enhanced.

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The Hong Kong Association for AD/HD - Recent development of a local parent association

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Families who have children with developmental disabilities and chronic diseases, such as AD/HD, unavoidably experience increased levels of parental stress and marital discord. The psychosocial and financial burdens of care for these children are substantial. The family supportive services are grossly inadequate and the need is imminent.

In order to empower families to cope with the challenges of bringing up children with special needs, the Child Assessment Service (CAS) of Department of Health has collaborated with community agencies to facilitate the development and formation of a local parent association on AD/HD in 2006. Preparation work was done by a group of parents with AD/HD children with the support of CAS staff. The Hong Kong Association for AD/HD was formally established and registered as a charitable organisation in December 2006. Its official founding ceremony was held in November 2007. At that time, the association has recruited about a hundred members and has solicited funds from community agencies. It has used the office spaces provided by the Community Rehabilitation Network at Wang Tau Hom.

Objective of the Association

The major objectives of the association are to promote understanding and support for children and adolescents with AD/HD and to advocate for necessary services for these children and their families. One of their missions is to promote self-help and mutual support for parents and family members. By linking families with similar predicaments, many parents discover the opportunity to share experiences and seek solutions to common problems.

Public education, Family support and Advocacy

Considering the misconceptions of the condition by the public and professionals alike, the association has taken a strong initiative to raise public awareness through various media interviews, community and school talks. Various social and recreational activities like sports programs, music, dance, drama lessons and emotional guidance groups were held to enhance the children's social participation and sense of self-esteem. Family activities like day camps and picnics were organised for the children and their families to enhance family interaction and cohesion. With the support of a sponsor, a user friendly website on the association was launched in September 2009 to facilitate communication with members and dissipate relevant information to the public (www.adhd.org.hk).

The association had their biannual election in June 2011 and a new executive committee was elected. A group of core members has gradually grown up in cohesion and solidarity. Their dedication and commitment to the association was impressive. This group of parents was often invited to share their experiences and concerns in different occasions to teachers and social

workers. They became regular presenters at the AD/HD Information Day (a psycho education program for families who have newly diagnosed children) held by CAS. They were also invited to present on various TV and radio programs to advocate for the welfare of these children. In the past years, the association continued to organise various talks and seminars for members as well as concerned parents. A drama class was organised for a group of AD/HD children and they had their premier performance in the Annual General Meeting of the association held in July 2009. Parenting training programs for members were held with the assistance of the Boys' and Girls' Clubs Association of Hong Kong (BGCA). This parenting training program is well received by members and has been running regularly every six months. This parent skills training offers a unique educational program to help parents navigate the challenges of bringing up these children. A research study is being conducted to evaluate the effectiveness of this program, using both quantitative and qualitative methods.

Parents of children impaired by the symptoms of AD/HD are often placed in a difficult position. The painful decision-making process to determine appropriate treatment for these children is often made worse by the wide variety of treatment options. Many of these treatment methods lack research support or long term studies. They include alternative treatment such as dietary management, herbal homeopathic treatment, biofeedback and meditation. In the past year, the association has organised more talks and sharing session on the efficacy of various treatment methods for children with AD/HD, especially on the use of stimulant medication. Local parents show much concerns about the risk of medication, while some parents have to bear with the negative pressures from families and friends against seeking treatment.

New PBS Project and Future direction

The new executive committee has the mission to increase the membership of the association, encourage professional research and advocate for better supportive environments for children and adolescents with AD/HD. As many of the current members' children are moving onto secondary schooling, new initiatives were made to promote public understanding of their developmental challenges and necessary services. One of their recent initiatives was a joint effort with a social service agency to develop a training package for secondary school teachers under the sponsorship of the Quality Education Fund. The project aims to develop a comprehensive and evidence-based approach for the effective classroom management of AD/HD students in secondary schools. Positive Behaviour Support (PBS) will be used as the core approach with local adaptations. The deliverables will be the production of a PBS Teacher's Manual and a Parent's Handbook provided free to concerned parties.

Advocacy, community education as well as consolidation of membership will be the challenges of the association in the coming year. More support from the community, various professionals and parents are definitely needed.