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**REVIEW****Attention Deficit Hyperactivity Disorder (ADHD) and Autistic Spectrum Disorder (ASD) in the UK and Maharashtra.**

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**Abstract:**

Attention Deficit Hyperactivity Disorder (ADHD) and Autistic Spectrum Disorder (ASD) are common disorders in "The Western World". The usual pattern of diagnosis & management of ADHD & ASD in the UK is described. The increased prevalence of ADHD & ASD in "The Western World" is said to be due to increased recognition rather than a true increase in their incidence. Speculation is presented that, as the economy improves in India and the assessment of children with behaviour disorders and apparent developmental delay improves, methods of diagnosis of these disorders will improve and many more children will be diagnosed as suffering from ADHD & ASD.

ADHD is a common disorder in "The Western World"<sup>1</sup>. There are estimates that it has a prevalence of 3.6% in boys and 0.85 % in girls in the UK and an even higher level (8.8%) in the USA. It is characterized by hyperactivity, poor powers of concentration and impulsive behaviour. In the UK whether children present to the health service with

ADHD, or not, depend on how well the parents and the school manage this disorder. If management of the child breaks down in either setting the child firstly would present to the family doctor (General Practitioner or GP) and they would refer the child to the local Child & Adolescent Mental Health Service (CAMHS) for assessment and management advice. Initially, the CAMHS team would assess the child generally to make an approximate diagnosis, bearing in mind all of the other possible behavioral disorders and mental health disorders. If the approximate diagnosis was ADHD, then the child would undergo a Conner's Assessment<sup>2</sup>. This is a structured scored investigative tool in which the parents and the child's school professionals are questioned over about 30 topics which include answers which bear on hyperactivity, poor concentration and impulsivity, but also other questions which cover other behaviour disorders. The answers are scored in such a way so as to give a clear indication of a positive diagnosis for ADHD, or not. It is very important that the Conners Score for ADHD is high both at home and at school, for ADHD is a pervasive disorder. If the behavioural

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disorder was only at home or only at school a psychodynamic explanation for the behavioral disorder would be sought.

If the child has ADHD and the child is usually male in a ratio of about 6:1 and they come to notice of CAMHS usually between the age of 5-10 years and the referral is often precipitated by the school not coping, then advice on the management of the disorder would be given in terms of behavioural management. It has been found that some children become hyperactive if given certain food additives and food constituents - chocolate, refined sugar, fruit squash additives etc<sup>3</sup>. Usually, the parents themselves have come to realize what these trigger factors are and have eliminated them from the child's diet. If they have not, they may be referred to a dietician to help them know the variety of possible trigger substances. If these measures are not found to be successful, the families are offered a mental stimulant course for the child<sup>1</sup>. This may seem a paradoxical approach, but it usually works. The theory behind it is that ADHD is caused by poor connections and stimulation of the frontal lobes of the brain by the mental stimulants (methylphenidate, atomoxetine, lisdexamfetamine) enhances the connections and flow of impulses from the frontal lobes<sup>4</sup>. Usually, the effect is to reduce hyperactivity, poor powers of concentration and impulsive behaviour. Methylphenidate, the most common medication, can be given in rapid acting or long acting preparations.

Children with ADHD usually continue to suffer from the disorder throughout childhood. However, between the

ages of 14-20 years some of them go into complete remission, others continue with the disorder and appear to need the mental stimulants for a long time in adult life and the rest of them continue to have the ADHD tendency, but, as adults, they are mature enough to deal with the symptoms themselves and live with normal acceptable behaviour<sup>5</sup>. The only way that a practitioner can ascertain whether or not, they still need the medication is to stop the medication (or note what happens when it is stopped accidentally) and observe what happens. The children who present to CAMHS with ADHD approximately 50-60% also have ASD<sup>6</sup>. They are usually children with Asperger's Syndrome: in other words children on the autistic spectrum, but intelligent and able to communicate to with others. However, they have the usual triad of autistic symptoms of difficulty in communication, including language disorder of some sort, difficulty in social relations and difficulty with rigid and stereotyped behaviour, repetitive rituals and obsessive traits. There is no doubt that the primary disorder in ASD is in social relationships and communication and the other symptoms follow from that disability<sup>7</sup>. They, like ADHD children, have a structured assessment tool - the ADOS (Autism Diagnostic Observation Schedule) test- that can be used to clarify diagnosis.

As a result of their ASD, children may exhibit very challenging behaviour. Because of their failure in social relationships they cannot cooperate with fellow pupils and make no friends. In their exasperation at these failures, they can

sometimes strike out violently. They need a structured regular repetitive environment in which they feel secure at home and at school. However, gradually, they also need to be encouraged to move beyond this structured environment and learn new skills of communication and cooperation and friendship. This is a challenge to both school and home and often these children have more trouble from their symptoms relating to their ASD than to their ADHD, which is often well controlled on the mental stimulant drugs.

The overall prevalence of ADHD in the UK is, as I stated, said to be about 10% and for ASD about 1%<sup>8</sup>. Again, with ASD there is a male predominance. Some people claim that all males have an autistic tendency<sup>9</sup>. This prevalence is much greater, for both disorders, than was the case in the past. In The West the reason for this is thought to be that they are both more accurately identified now than in the past, not that some environmental or child management problem with parents has caused the increase. Both disorders have only entered the paediatric diagnostic spectrum since 1960 and there has been a learning curve for professionals and a steadily increasing awareness of the disorders from the general public. There is neurological research evidence that both disorders are due to imperfect wiring of the CNS and, especially, the CNS connections between the frontal lobes and the rest of the brain<sup>10</sup>. However, whilst the good effect of mental stimulants on ADHD has been already noted, I am not aware of any evidence of a good effect of medication on ASD. Naturally, drugs such as risperidone might be used where a child with ASD has

undue aggression & challenging behaviour and anti-depressant drugs might be used in such children if they have severe depression, but there are no drugs to attack the underlying ASD.

What of children in India? In 2 years coming to Maharashtra and about 10 weeks of clinical exposure to general paediatric patients, I have only seen one clear cut case of ADHD, although many Indian children seem very lively to me, but they do seem to respond to parental or school control. I am not aware of having seen a case of ASD, but with the language difficulty between me and patients' families I may well not have noticed ASD even if it was present. Also, there is a question of cultural differences: it may be that parental & school management in Maharashtra simply deals with both disorders without any diagnosis having been made and the patients never present to health professionals for management. I would guess that with the ever enlarging Indian Middle Class, that, along with other "Western" malaises, ADHD and ASD will become more recognized and will need to be managed more in the future. It was thought at one time that ADHD and ASD were uncommon disorders in The West, but not now<sup>11,12</sup>.

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