Research Topics

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Some considerations for teachers and parents

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SOME CONSIDERATIONS – FOR TEACHERS AND PARENTS

by Dr Martin Phillips

WHAT IS ATTENTION?

Essentially "attention" is an area of Executive Function (see Behaviour Rating Scale of Executive Function – BRIEF) and Clinical Assessment of Attention Deficit – Children – CAT-C and Adults –CAT A).

In general, the word "attention" refers to the mental processes that enable people to be alert and to selectively focus on information from the environment or from the contents of their thinking. Included in this set of mental processes are the following:

- Arousal and alertness: being awake and receptive to incoming stimuli or other information
- Preparing attention: presetting oneself to attend to selected information (e.g., deciding what information to look for before beginning to read a chapter in a text book)
- Selecting a focus of attention (concentrating): Attending to only one thing when there are many stimuli occurring at the same time (e.g., listening to the teacher talk when there are other activities occurring in the classroom)
- Maintaining/sustaining attention: maintaining a focus of attention over time (e.g., attending to a teacher's lesson for a full 40 minutes;)
- Inhibitory Control: maintaining a focus of attention while also actively avoiding attention to competing stimuli or information (e.g., refusing to pay attention to other children's chatter while listening to a teacher's lesson)
- Shifting/switching attention: changing the focus of attention from one thing or topic to another
- Dividing/sharing attention: actively paying attention to more than one source of information at one time (e.g., taking notes and listening to teacher talk at the same time)

Attention is important and has been intensively studied because it is the gateway to the rest of cognition. That is, children must be paying attention if they are to organise incoming information, comprehend it, remember it, engage in problem solving etc.

However, it is hard to distinguish primary attention problems from other cognitive problems and from emotional or behavioural problems. For example, if a child's processing of information is slow (i.e., primary speed of processing problem), then it will be difficult to pay attention to fast-paced information. Or if a child has difficulty organising incoming information (i.e., primary organisational problem), then again attention will be difficult to maintain. Similarly, children who are anxious, sad, or depressed may appear to have attention deficits when the problem is really an emotional problem. Thus teachers and family members should try to identify the primary contributor(s) to the problem before proceeding with intervention and support plans.

According to the Diagnostic and Statistical Manual of Mental Disorders Fourth Edition (DSM1V) there are at least two main types of children with an Attention Deficit (& Hyperactivity), which may be combined: those who are primarily impulsive and hyperactive (ADHD-H) and those who are primarily inattentive (ADD or ADHD-I). Characteristics of ADHD-H include the following: frequent fidgeting, squirming, and leaving the seat; inappropriate running or climbing; difficulty playing quietly; excessive talking; talking out of turn; difficulty waiting; frequent interruptions. Characteristics of ADD/ADHD-1 include the following: distractibility; failure to pay close attention; careless mistakes; frequent inattention to others; weak sustained attention; poor organisation of things and activities; frequent loss of things; poor follow through on tasks; aversion to tasks that require mental effort; forgetfulness. Children with the combined type of ADHD have characteristics from both lists.

Whether the problem is congenital or acquired as a result of diet, nutrition or other factors, several problems tend to be associated with attention disorders. Children with attention-related disorders tend to be disorganised and impulsive, to have poor orientation to time, and to learn very inefficiently from the consequences of their behaviour. In addition, they may have co-existing learning problems and behaviour problems.

THE MAIN THEMES IN INTERVENTION AND SUPPORT FOR CHILDREN WITH ATTENTION DEFICITS?

Understanding the Problem

As with all problems, step one is understanding the problem. For example, attention problems may be misidentified as non-compliance or defiance. Similarly, problems with organisation, memory, or comprehension may be misidentified as attention problems. Anxiety or depression may also result in behaviours misidentified as attention problems.

Expectations:

Step one in environmental management is to ensure that teachers and family members have appropriate expectations regarding the attention and self-regulation abilities of children with attention and related disorders. For example, some children are incapable of focusing quietly for more than 10 or 15 minutes at a time. These children should be given regular breaks, possibly including some type of physical activity. Some children are incapable of organising the materials in their desk. These children need organisational help from others. If the child's limits are not understood, a negative cycle of problem behaviour and punishment is likely to result.

Controlling Environmental Factors:

In general, children with attention deficits and related disorders profit from an environment that has a clear structure, stable routines, and well understood expectations.

Stable Routines:

At home and at school, routines should be as stable as possible. Create consistent time schedules. Have consistent places for objects (e.g., for books, materials, etc) and activities (e.g., a quiet study place). Create consistent beginnings and endings to activity periods (e.g., routines for beginning activities should include instructions that are brief and include visual cues). Preset the child to changes in routines. Provide written or pictured cues for the steps of a complex task or routine.

Adequate Change, Novelty, and Interest:

Often children with attention deficits and related disorders engage in off-task or disruptive behaviour because they need greater stimulation than other children. This may appear to be inconsistent with the need for stable routines, but need not be. Routines should be reasonably brief and include adequate physical activity (e.g., standing, moving between activities). Learning projects should be interesting and engaging (e.g., colourful materials, personally interesting tasks). Large tasks should be broken down into small steps and adult feedback and encouragement should be frequent and positive. Low and high interest tasks should be alternated so the child has a motivating task to look forward to. "Fidgety" children should be allowed physical activities that do not disrupt other children (e.g., tapping a pencil that has a sponge head).

It was once thought that children with attention deficits and related disorders would benefit from quiet cubicle spaces with no distractions. Studies have shown that this type of environment is not helpful. Children may need to be in reasonably stimulating environments (e.g., posters on the walls, interesting bulletin boards), but with stable routines within those environments.

Assignments:

To ensure selective attention to task, the following procedures are useful. Make sure that the child has something specific to listen for during listening tasks. When giving assignments, show the child a model of what the finished product will look like. Use outlines, checklists, graphic organisers, colour coding, or other highlighting procedures for assignments. Use a magic marker to highlight instructions, headings, and arithmetic process signs on work-

sheets. Use prompt cards to guide behaviour during unstructured times. Ask children to repeat instructions to ensure their comprehension.

Cooperative Learning Groups:

Children who have difficulty attending and organising themselves often benefit from learning within the context of cooperative learning groups. Their thinking and learning can be organised by interaction with peers. Their need for stimulation and novelty can be met by peer interaction and brainstorming. Children may need to be taught explicit rules for the various roles within learning groups. To control turn taking, a "talking stick" (conch shell!) can be passed from speaker to speaker. Peer tutoring has also been found to be useful for children with attention deficits and related disorders. Whether or not cooperative learning groups are used, children with attention deficits and related disorders should have opportunities for task-related talking.

Turning Over Responsibility to the Child:

Environmental management always runs the risk of an unwanted and possibly growing reliance on environmental supports. Supporting children should always be organised around the motto, "Help children without making them helpless." Thus environmental supports should be reduced as it becomes possible to do so. Furthermore, teachers and parents should gradually turn over to the child responsibility for organising tasks and setting deadlines, creating monitoring systems for homework, deciding when and how to complete household chores, asking for help, staying on topic, and solving problems.

Nutrition and Supplements

Attention and Hyperactivity in many cases has been linked to diet, which includes food allergies and nutritional deficiencies…simply eliminating certain foods or adding others may reduce symptoms or eliminate them altogether. Hyperactive children are especially vulnerable as they are 'hyper' sensitive to sugar and other stimulants. Some children's behaviour changes very shortly after he or she consumes a soft drink, sugary cereals or chocolate. It is believed worthwhile attempting to address the 'root' of the problem first, if it is indeed nutritional, before ingesting the potentially toxin pharmaceutical alternatives that merely mask the symptoms. Making healthy food choices for your child is NOT difficult. There is NO downside to adopting a healthy eating programme and huge benefits for everyone, whether dealing with a current health issue or preventing future ones.

A growing body of research points to nutritional deficiencies - especially with essential fatty acids and amino acids - as a contributing factor of concentration difficulties and learning deficiencies.

An Oxford University (England) study evaluated the effects of fatty acid supplementation in average intelligence children with significant reading and writing disabilities. The concentration symptoms in children receiving essential fatty acids significantly improved over the children in the control group receiving a placebo.

Researchers further documented the essential fatty acid deficiency tie to Attention Deficit Hyperactivity Disorder in a 1987 study. Then, a 1995 study comparing essential fatty acid levels in ADHD boys against a control group of boys without ADHD found significantly lower levels of Omega-3 fatty acids.

Fatty acids are used to make brain and nerve tissue in the body and are crucial for proper growth, mental function, the immune system and brain development. The body cannot produce the two fatty acids families, Omega-3 and Omega-6, on its own and therefore must receive these key Attention nutrition ingredients through diet and supplementation.

Many children with learning difficulties suffer, in addition, from a deficiency in HUFA (High Unsaturated Fatty Acids). These are only found in oily fish – not usually a part of a child's diet. The latest research at Oxford University suggests that HUFA's (Omega 3 and Omega 6) are given as supplements.

Food additives can worsen attention and hyperactivity symptoms.

A well known study published in the British medical journal The Lancet in 2007 reported that children fed a diet with artificial colours and the preservative sodium benzoate were more inattentive and hyperactive than children fed a diet that did not include these substances. The food additives thought to cause these problems included: U.S. certified colour Red #40, Blue #2, Yellow #5 (Tartrazine), Yellow #6 (Sunset Yellow), as well as sodium benzoate

which is found in processed foods and many drinks.

Pharmacological Intervention: (Medication)
Stimulant medications are often useful for children with attention deficits. Parents should ensure that the prescribing physician has experience with children with ADHD/ADD Often several medications and doses are explored before the optimal combination is identified. A systematic procedure must be in place to monitor the effectiveness of the medication and its dose.

Stimulant medication has been shown to reduce problematic symptoms (e.g., impulsiveness, disorganisation, poorly controlled attention) in children with attention deficits and related disorders. Behavioural interventions (described below) add to this effect. In some children, the focusing effect of the medication increases the likelihood that environmental and behavioural interventions will be effective.

Behaviour Modification Programmes:
Specialists in the field of attention disorders frequently offer the following advice about contingency management with these children.

(1) Because children with attention deficits, and related disorders are typically impulsive and because the area of the brain involved is the same area as that which enables humans to learn from consequences, teachers and parents should not expect long-term improvements in behaviour as a result of contingency management programmes.
(2) Nevertheless, clearly defined rewards and punishments may be necessary to turn around negative behaviour over the short run. For children with attention disorders, the consequences should be more immediate (i.e., given immediately after or shortly after the behaviour occurs) and more salient (e.g., intense praise or fun activities for younger children; intense praise for older children) than would be necessary for other children the same age. For example, the promise of an end-of-the-day reward will be ineffective for a young child with attention disorders. Similarly the Monday promise of a weekend reward will likely be ineffective for an adolescent with attention disorders.
(3) Intense praise should be provided for effort and small steps, rather than waiting for success with larger or more important tasks.
(4) Activity rewards are useful for children with attention disorders (e.g., when you are done with your maths problems, you can walk to the library) because they satisfy the need for high levels of activity. For highly active children, academic activities should include frequent motor activities (e.g., making checks on a checklist, organising materials, cleaning the whiteboard).
(5) Even if behaviour is changed for the better with immediate and salient rewards or punishments, teachers and parents should not expect these changes to translate into long-term changes in behaviour. Remember, the parts of the frontal lobes that support self-regulated behaviour, including attention, also control learning from consequences. So children who are impulsive and have poorly regulated attention are the same children who fail to learn efficiently from the consequences of their behaviour.
(6) Rewards for positive behaviour should be part of any management system for children with attention disorders or any other disability. A generally positive environment, rich in natural rewards for successful behaviour, helps prevent a downward spiral of behaviour and a negative self-concept, both of which are likely if the child experiences considerable failure and punishment for negative behaviour.

Behaviour Modification:

Prevention Strategies:
Prevention strategies are procedures designed to set the child up for success rather than merely reacting to the child's behaviour after it has occurred. The general idea is to increase the frequency of desirable behaviour by encouraging the development of positive habits. This is accomplished by teaching relevant skills and by managing the environment to avoid triggers for negative behaviour and create triggers for positive behaviour. The two keys to behaviour modification for these children are teach and prevent.

Positive Alternatives to Negative Behaviour:

Children with behaviour problems associated with their attention deficit should be taught positive alternatives to their negative behaviour. For example, if a child with a short attention span simply gets up and leaves a task after a few minutes without permission, he should be taught to request a break as an alternative. The break should be short, followed by a return to task.

Redirection:

Children with attention deficits have difficulty remaining focused on tasks, particularly those that are not intrinsically interesting. Loss of focus should be anticipated by teachers who are equipped with scripts of redirection. Redirection can range from physically redirecting the child to the task at hand (e.g., taking him back to his desk and restarting the activity) to providing subtle cues (e.g., a printed cue, like "focus"). When redirecting the child, teachers and parents should be careful to avoid reinforcing off-task or other negative behaviour. Unintentional reinforcement can occur, for example, if the adult provides too much attention to the negative behaviour or talks at great length to the child after off-task or other negative behaviour. Furthermore, if the off-task behaviour is intended (consciously or unconsciously) by the child to escape the task at hand, then removing the child from the task (e.g., time out) will reinforce the negative behaviour, not cause it to decrease.

Well Understood Rules with Natural and Logical Consequences:

Because of the impulsiveness and disorganisation associated with attention disorders, there is great value in organised environments in which rules and expectations are well understood by the child and consistently managed and enforced. Above it has been mentioned that the point is emphasised that children with impulsiveness and attention problems may not change their behaviour effectively in the long run as a result of the consequences they receive for their behaviour. Nevertheless it is important to live in a world in which positive behaviours have natural positive consequences (e.g., praise, special privileges) and negative behaviours have natural negative consequences. For example, if the child trashes his room, he should be expected to clean it up after a cooling-down period. If he fails to do his homework, he should be made to do it at a later time. This may not change future behaviour, but it does help to teach lessons about how a predictable and organised world operates.

Self-Regulation Programmes:

Attention disorders have recently been characterised as an executive function disorder, with impulse-control problems being at their core. All intervention and support procedures that fall under the heading, self- executive functions, are relevant for this group of children.

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