

The most effective interventions for autism



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The term Autism spectrum disorder was defined in the Diagnostic and Statistical Manual of Mental Disorders (American Psychiatric Association, 2000) as “ pervasive developmental disorders “(PDDs) referring to developmental disorders which share core and common characteristics such as impairments in social interaction. Given the fact that researchers include nowadays milder and atypical forms of PDDs, these are represented as a spectrum (Carr, LeBlanc, 2007). There are three PDDs which are typically considered to be related to ASD: autism, Asperger’s disorder and PDD-NOS – not otherwise specified (Carr, 2007). All PDDs involve impairments in reciprocal social interaction skills, with degree depending on skills, cognitive abilities, interests etc.

To be diagnosed as suffering from autism, an individual needs to meet several criteria, including 3 main symptoms. Firstly, social impairments such as avoidance of peer interaction, stereotypical behaviour when playing, difficulties between 12 and 18 months in areas including joint attention, social responsiveness and eye contact (Osterling et. all, 2007); social impairments lead to limitation of learning and thus language impairment, communication being the second core deficit of children with autism. They fail to develop language or fail to engage in conversation for social purpose (Smith, 1999). The third core symptom is restricted and repetitive behaviour, most commonly observed in preschool and school aged children, which may consist of hand flapping, toe walking and rocking (Lord et. all, 1997). They might also show restricted interest or preferences for unusual and age-inappropriate items combined with problem behaviour when those items are

not readily available as well as insistence in routines or rituals with distress coming with minor change (Carr, Leblanc, 2007).

According to the CDC (US Centre for Disease Control and Prevention), there were reported 5 to 6 out of 1000 children aged 4-17 suffering from autism (compared to previous estimates which were lower). Other articles using different research methods showed 1 out of 10 000 suffering from autism and 1.6 out of 1000 suffering of other ASDs.

Similar to other developmental disorders, autism and ASDs cannot be “cured” (relieved from symptoms of a disease or condition, according to Oxford Dictionary), continuous management is required. Although outcomes may vary depending on each individual and interventions used, behaviour may change over time but most people with ASDs will remain within the spectrum (Myers et al, 2007). Intervention methods in autism mainly aim to minimize the deficits and maximize independence of children suffering from autism therefore the most efficient intervention will not cure but help an individual maximize quality of life and reduce distress.

The National Research Council recommends entry into a treatment program as soon as diagnostic is considered, as well as intensive treatment (National Research Council, 2001). Early intervention focuses on the different skills each child might possess, “developmental trajectories are not fixed” (Howard et al, 2005). Ramey and Ramey (1998) define the “zone of modifiability” as being the period of time during which development for children with autism might be determined by treatment (timing, intensity and appropriateness-Howard et al, 2005). Research showing that early

intervention might change brain architecture and function leads to the conclusion that early intervention in autism might produce lasting neurological and behavioural changes (Dawson, Fisher, 1994).

Applied Behaviour Analysis (ABA) refers to interventions based on principles of learning derived from experimental psychology research (Myers et al, 2007). This method is used mainly to increase desirable behaviour and reduce maladaptive one, or reduce the chances and conditions under which it may occur. ABA mainly focuses on evaluation and measurement of observable behaviour within relevant settings (home, school, community - Myers et al, 2007). A very important aspect of ABA-based treatment is functional behaviour analysis, a form of empirical research used to gather information that can be used to maximize effectiveness of ABA interventions. Most behaviours are shaped using operant conditioning (reinforcement and punishment) such as attainment of adult attention, desired items or reducing frequency of undesired situation (Myers et el, 2007). ABA intervention and its effect on children with autism has been well documented in both single-subject methodology (Campbell, 2003) and controlled studies of EIBI in universities and communities (Lovaas, 2003; Cohen et al, 2006). . Early Intensive Behaviour Intervention (EIBI) is a skill-based intervention, based on the principles of behaviour analysis (ABA) which has three main characteristics: intensive treatment (30-40 hours per week, for 2 years), hierarchically organized curriculum focusing on reading skills, communication, social and preacademic repertoires (Lovaas, 2003). Although there is a considerable amount of evidence coming from a number of behaviour analysts that EIBI is effective in changing behaviour in children

with autism, the most well-known is a study by Lovaas (1987) conducted at the UCLA (UCLA Young Autism Project). It relies on discrete trial training (DTT) methodology which is useful in establishing learning readiness by teaching fundamental preacademic skills (attention, compliance, imitation and discrimination learning - Myers et al, 2007). This study was singular for showing substantial improvements in a large proportion of behaviour in children with autism who received intensive, long-duration behaviour analytic intervention starting before the age of 4 (Howard et al, 2005). Nearly a half of experimental group participants with ASDs achieved normal intellectual functioning after 2 to 3 years of one-to-one treatment (40 hours/week). DTT has been criticized, however, because problems with generalization of learned behaviour to spontaneous use and because the structured environment is not representative of natural interactions (Myers et al, 2007); traditional ABA techniques have been modified : naturalistic behavioural interventions, incidental teaching or natural language paradigm may enhance generalization of skills (Schreibman, 2005).

Another approach in ASDs are non-behaviour analytic or “ eclectic” interventions (Howard et al, 2005) which include models such as TEACCH, DIR, SIT, Biomedical Approach or hyperbaric oxygen therapy which have been proven through several experiment to be less efficient than ABA-based interventions (Myers et al, 2007, Howard et al, 2005).

Education means “ fostering of acquisition of skills and knowledge to assist a child to develop independence and personal responsibility” (Myers et al, 2007), consisting not only of academic learning but also social, communication and adaptive skills. There are several programs using <https://assignbuster.com/the-most-effective-interventions-for-autism/>

education-based interventions which share many common goals and characteristics although they may vary in philosophy (Myers et al, 2007). Project TEACCH (Treatment and Education of Autistic and Related Communication-Handicapped Children) developed by Schopler and Lord (Lord, Schopler, 1989) is a classroom model for instructing children with autism and autism-related disorders (Carr, LeBlanc, 2007). As it emphasizes structure, it has been called “ structured teaching”. Its main goal is to accommodate the learning style of children with autism rather than attempting to remediate their deficits (Carr, LeBlanc, 2007), using several strategies such as organization of environment, predictable activities, visual stimuli, structured activity systems and individual workstations in order to minimize distraction (Carr, LeBlanc, 2007, Mesibov et al, 2005 and Myers et al, 2007). Although documents reported progress in children who have received the TEACCH intervention, increase in parent satisfaction (Myers et al, 2007) and it is considered “ plausible” by the National Research Council (Carr, LeBlanc, 2007), it was Onzoff and Cathcart who found in a controlled trial that children treated with a home-based TEACCH program for 4 months showed significant progress when compared to children in control groups (Onzoff, Cathcart, 1998).

Relationship-based interventions include the individual-difference, relationship-based model (DIR) developed by Greenspan and Wieder (Greenspan, Wieder, 1997), the relationship-development intervention (RDI) developed by Gustein and Sheely (Gustein, Sheely, 2002) and Mahoney’s responsive-teaching (RT) curriculum (Mahoney, McDonald, 2003). Their main goal is to reduce social deficits (Carr, LeBlanc, 2007) and to “ enhance

relationships and emotional and social interactions to facilitate emotional and cognitive growth and development” (Myers et al, 2007). Despite their popularity, there is no significant study to document their effects and the evidence of their efficacy is anecdotal (Myers et al, 2007).

Another approach commonly used in dealing with ASDs is Sensory Integration Therapy (SIT), administered by occupational therapist in school settings (Carr, LeBlanc, 2007) which aims to develop “ self-care skills” (Myers et al, 2007) like dressing, using utensils and fasteners, scissors etc. SIT is mainly based on the theory that dysfunction of the sensory systems (vestibular, proprioceptive, tactile etc) cause improper neurologic processing leading to developmental disabilities thus causing ASDs (Carr, LeBlanc, 2007). It is usually used on its own or as part of a program of occupational therapy (Myers et al, 2007) and includes exercises which stimulate reorganize the sensory system (Carr, LeBlanc, 2007). It does not teach skills or behaviour but aims to remediate deficits in neurologic processing. To date, there have been few studies made on its efficacy and available studies tend to be limited (Smith et al, 2005).

As social communication impairments are core for children with ASDs, a variety of approaches have been reported as effective in developing communication skills. Didactic and naturalistic behavioural methodologies have been studied most but there is also empirical support for developmental-pragmatic approaches (Myers et al, 2007). One of the most widely used methods for enhancing communication in children with ASDs is the Picture Exchange Communication System (PECS) (Bondy, Frost, 1994). It contains both ABA and developmental-pragmatic principles, the child being

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taught to initiate a picture request and insist until receiving an answer (Schepis et al, 1998).

Children with autism have special health needs, compared to children without disabilities. A gluten-free/casein-free diet very popular, as children with ASDs have abnormal gastrointestinal functioning (Carr, LeBlanc, 2007). However, there is very few evidence to support that it is effective, most likely because children with ASDs often have food selectivity (Carr, LeBlanc, 2007). In addition, vitamins, such as Vitamin C, B6 or B12, or Pure DHA (an OMEGA 3 and Vitamins A, E and D complex) are also common forms to treat ASDs because they are thought to enhance neurotransmitter functions. Although a positive effect has been indicated in reports about vitamin B6 and Mg on ASDs, controlled investigation produced rather equivocal findings (Carr, LeBlanc, 2007). Drugs are another form of treatment, like Risperdal (Risperidone), an atypical antipsychotic used to treat problem behaviour associated with ASDs. In a clinical trial testing its efficacy, it was shown that 69.4% reduced irritability, with minor improvements sustained after 6 months. However, problem behaviour has been showed to serve as a way to gain attention (Reese et al, 2005), functional assessment is thus more effective in selecting psychoeducational interventions that reduce problem behaviour without the use of medication (Khang et al, 2002).

ASDs affect nearly 1 of every 150 children (Myers et al, 2007) who require chronic management in terms of medication and support. Although several studies demonstrated the efficacy of some intervention in increasing the quality of life and reducing problem behaviour, much remains unknown. Whether they are efficient or not, depends from child to child and from their

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supporting family, early diagnostic and entering a treatment program being critical factors in dealing with it. Although