Autism: Symptoms, Diagnosis, Causes, and Treatment

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Abstract

This paper explores the definition, prevalence, symptoms, causes, and treatments of autistic disorder, which is characterized by deficits in social cognition, language ability, and stereotyped patterns of behavior. Once considered to be a rarely diagnosed disorder, the incidence of autism has grown exponentially in recent years. The process of identifying autistic children, who often crave routine and consistency, is currently at the forefront of medical consciousness. As of yet, there is no unitary explanation for behaviors that range across a wide spectrum of etiologies; however, through the use of developmental assessments, analysis of social interaction, repetitive behaviors, and regression, a diagnosis of autism can be made. There are believed to be both genetic and non-genetic proposed causes of autistic disorder, including perinatal conditions, environment, bio-chemical, and psychological factors. Although there is no cure for this disorder, treatments have been recommended to ameliorate the effects of the syndrome. Such interventions can include the use of pharmacology, provision of food supplements, educational therapy, and exercise regimens. The goal of treatment is to aid in the child’s achievement of more normal levels of functioning and interaction. No treatment program, however, has been universally victorious in the battle against autism. More research is needed into the causes of and treatments for autism, as there is still so much we do not understand about this disorder.
Autism: Symptoms, Diagnosis, Causes, and Treatment

It was not until the middle of the twentieth century that a name was created for a disorder that now appears to affect more than half a million children in the United States. The origin of the term “autism,” dates back to 1943, when Dr. Leo Kanner introduced the disorder after his study of eleven developmentally challenged children (Kanner 1943). He described these children as having “autistic disturbances of affective contact (. . .) characterized by profound lack of social engagement” (Volkmar & Lord, 1998, p. 2). Around the same time, a German scientist, Dr. Hans Asperger, was also studying childhood development, and through his work, he came to describe a milder form autism, which became known as Aperger syndrome (Asperger, 1944). These two disorders are described, categorized, and listed in the Diagnostic and Statistical Manual of Mental Disorders DSM-IV, as two of the five Pervasive Developmental Disorders (PDD), also known as, Autism Spectrum Disorders (ASD). The other disorders within the ASD category are Rett Syndrome, seen exclusively in girls and characterized by normal development followed by decelerated cranial growth (Volkmar & Lord, 1998, p. 7), Childhood Disintegrative Disorder, which is characterized by a period of normal development prior to the onset of severe developmental regression (Volkmar & Lord, 1998, p. 5), and Pervasive Developmental Disorder not otherwise specified (PDD-NOS), which is applied to children with deficits in social and communication abilities, but who “do not meet the criteria for the formally defined disorders in the class” (Volkmar & Lord, 1998, p. 7). All five of these disorders are characterized by varying degrees of impairments in social interaction, communication skills, and stereotyped patterns of behavior (American Psychiatric Association, 1994). At any degree, these pervasive developmental disorders cause significant disruption in families, and can make the lives many
children extremely difficult. For this paper, I will focus on the recent information regarding the characteristics, proposed causes, and treatment options, specifically associated with autism.

The first subject to explore deals with the definition of autism, the most frequently utilized of which is found in the *DSM-IV*. According to this manual, autism is defined as a pervasive developmental disorder “caused by a dysfunction of the central nervous system,” leading to “disordered development” (American Psychiatric Association, 1994), which manifests before the child is three years old. The *DSM-IV* further characterizes autism in terms of significant impairments in social interaction, insufficient verbal and nonverbal communication skills, and stereotyped patterns of behavior.

In terms of the prevalence of autism, there has been a dramatic increase in the last 30 years. According to the Center for Disease Control and Prevention (CDC), in the year 2000, the prevalence of autism was 1 in 250 children in the United States. The most current research, however, reported by the CDC’s Autism and Developmental Disabilities Monitoring (ADDM) network in 2007, has found that the prevalence has risen to 1 in 150 children. Using these statistics, it is estimated that approximately 560,000 children in the United States have autistic disorder (CDC, 2008), most of them male, as the ratio of incidence in males to females is 3.7:1 (Fombone, 1998). Based on this new data, autism is now more prevalent than childhood cancers, diabetes, Down’s syndrome, and spina bifida (Filipek, 1999). This rise in the occurrence of autism may be partially attributable to improved awareness of the disorder, as well as to advances in diagnostic capabilities, but these factors alone cannot account for such an increase. The fact that the number of families affected is ever-increasing, and that so much is unknown about this disorder, has sparked a curiosity to investigate the symptoms, causes, and possible treatments for this disorder.
With symptoms of this disorder appearing so early in life, most often manifesting within the first three years, parents are usually the first to notice that something is abnormal about their child. They may not realize, however, the specific nature or degree of the problem. This early detection is made all the more difficult by the fact that motor skills usually develop as normal, and “the smiling reflex develops as usual, but the baby appears unresponsive to the environment” (Wing, 1966, p. 5). According to the National Institute of Mental Health (NIMH), it is possible that the child may have seemed “different” from birth, as even during infancy, he may be completely socially unresponsive (NIMH, 2008). He may also struggle when it comes to “developing routines of feeding, sleeping and elimination from the moment of birth” (Wing, 1966, p. 5).

In their chapter entitled “Social Cognitive Development in the First Year,” authors Philippe Rochat and Tricia Striano assert that healthy infants are born with an innate sensitivity to social stimuli (Rochat and Striano, 1999, p. 4), which continues to mature during the first six weeks of life. This instinctive awareness of their surroundings lends to infants’ ability to behave as “social beings” (NIMH, 2008). Soon after birth, they turn their heads in response to the sound of voices, and they grab hold of caregivers’ fingers (NIMH, 2008). Infants with autism, however, do not respond to social stimuli in such a way. An autistic toddler does not point to things in his environment that he wants, as typical infants do, nor does he “lift up his arms in anticipation of being picked up” or “adapt his posture to his mother’s” (Wing, 1966, p. 5). Whereas a typically developing infant will stare at people and take pleasure in social attention, an infant with autism will avoid eye contact, and may seem completely indifferent to the presence of others (NIMH, 2008).
He also does not display typical attachment behaviors, and to his parents, “it may seem as if (he) is not attached at all” (NIMH, 2008). Autistic children are often described as “not cuddly,” as they are either, “stiff and resistant to contact,” or “passive and floppy” (Prior & Ozonoff, 1998, p. 81). Children with this disorder rarely seek out their parents for comfort, and only “passively accept hugs,” and other displays of affection (NIMH, 2008). They show more avoidant behavior (Prior & Ozonoff, 1998, p. 82), and “may be happiest when left alone” (Wing, 1966, p. 5). Cuddling can be a significant contributor to the parent-child bonding experience, and parents of autistic children often “feel crushed by this lack of typical attachment behavior” (NIMH, 2008).

The social interaction impairment in autistic disorder is usually substantial and sustained over time. At the heart of the disorder, “at every age and stage, and every level of functioning, is a lack of reciprocal social interaction” (Prior and Ozonoff, 1998, p. 83). Social interaction is crucial for development, as infants learn, not through observing, but through “engaging in reciprocal exchanges with others” (Rochat and Striano, 1999, p. 4). Without the ability to socially interact, an autistic child’s development is, therefore, significantly hindered. From the beginning of life, an autistic child struggles when it comes to “perceiving and processing social and emotional cues in people and in the environment” (Rutter 1983).

Not only is he unable to reap the developmental benefits associated with human interaction, but this lack of social exchange further exacerbates his behavioral problems. The devastating effects of a lack of social interaction are illustrated in Rene Spitz’s tragic documentary footage of young children in overcrowded orphanages. These children are “deprived of on-to-one contacts with caretakers,” and they demonstrate “pervasive behavioral stereotypes,” such as “rocking ( . . . ) back and forth” (Rochat & Striano, 1999, p. 4). Although
these children are not autistic, their behavior is extremely similar to those with the disorder. The difference lies in the fact that an autistic child usually has a caretaker available with whom to interact; however, he is unable to take advantage of such a relationship. The social deficiency seen in autism may contribute to the development of the stereotyped behaviors associated with the disorder; for example, the rocking that is seen in both orphans and autistic children may be an attempt to self-comfort (Rochat & Striano, 1999, p. 4), as neither group of children is able to receive consolation from the outside world.

There is a profound deficit in theory of mind in autism (Prior & Ozonoff, 1998, p. 87), as these children are unable to see the world from someone else’s perspective (NIMH, 2008). They are unable to grasp the concept that “other people have ‘minds,’” as they have what Francesca Happe and Uta Frith named “mind-blindness” (Happe & Frith, 1995). In their chapter entitled “Psychological factors in Autism,” authors Margot Prior and Sally Ozonoff (1998) state that “even high functioning individuals, ( . . . ) who are actively seeking to make contact with others, suffer from a lack of insight into the thoughts, feelings, plans, and wishes of others” (p.83). These authors go on to note that no matter how hard these children try, “they cannot master the skills necessary for true reciprocity of social communication” (Prior & Ozonoff, 1998, p. 83).

In addition to limitations in social interaction, autistic children also lack proficiency when it comes to both verbal and nonverbal communication. For some autistic children, the communication deficit is exceptionally severe, and they may remain completely mute and unresponsive throughout their lives (NIMH, 2008). If the child has not developed the ability to speak by the age of six, it is highly unlikely that he ever will (Prior and Ozonoff, 1998, p. 87). This is, of course, extremely difficult for parents, who never have a way of knowing what their child thinks or feels.
By one year, children are typically babbling and learning to communicate, and language acquisition is often considered to be “the pinnacle of development in the child” (Illinworth, 1980, p. 17). Autistic children, however, often struggle greatly to reach this momentous milestone. In terms of the development of verbal communication abilities in autistic children, “speech is almost always delayed” (Wing, 1966, p. 6). The findings that these children often do not babble during infancy, nor turn their heads in response to the sound of human speech (Klin, 1991), reveal the early incomprehension of language in these children, leading to their delayed onset of first words (Prior and Ozonoff, 1998, p. 87).

If an autistic child does acquire the ability to speak verbally, he still may have difficulty communicating effectively, as the speech of these children is often “impaired or limited in significant ways” (Prior and Ozonoff, 1998, p. 87). For those who are able to produce words, they often struggle to combine those words successfully into meaningful sentences NIMH, 2008). In addition, according to the DSM-IV, their rhythm and grammar are likely to be off. The largest deficit in terms of communication ability, however, is seen in autistic children’s lack of understanding for the rules of pragmatics, which refers to “language used to communicate socially” (Tager-Flusberg & Anderson, 1991). These children “lack initiative” when it comes to both prompting and maintaining conversation (Wolff & Chess, 1964, p. 438).

The repetitive nature of this disorder adds yet another obstacle impeding effective communication, owing to the child’s frequent reiteration of words or phrases, known as echolalia, or echoed speech. This is a common feature of autism, at which time the children “parrot what they hear” (NIMH, 2008). They often imitate the last words of what was said, usually “with identical inflection” (Wing, 1966, p. 8). This leads to the frequent repetition of sentences that are meaningless. Up until recently, specialists perceived echolalia as a significant
drawback, as the use of echolalia was believed to result from an autistic child’s failure to understand what he heard. Current research, however, is showing that echolalia may actually be advantageous for these children, owing to its promotion of their use of language (Berkell, 2005, p. 355).

In addition to it being difficult to understand what an autistic child is saying, his body language is rarely readable, as his facial expressions, gestures, and movements often do not correspond with his words. One of the core features of the social deficiency seen in autism is the inability to effectively utilize and understand facial expressions and gestures. This can make the "social world (.) seem bewildering" (NIMH, 2008). This inability to mimic facial expressions and gestures is, "a notable feature of autism and is a distinguishing diagnostic characteristic (Prior & Ozonoff, 1998, p. 66). According to the NIMH, “Without meaningful gestures or the language to ask for things, people with ASD are at a loss to let others know what they need. As a result, they may simply scream or grab for things” (2008).

Another feature of many autistic children is the constant need for consistency. This often leads to the development of rigid schedules, and an autistic child may become extremely distressed by even the slightest deviation from his routine. For example, changes in the times of school, meals, baths, sleep, etc. can be extremely upsetting for an autistic child. This resistance to change tends to prompt the development of nonfunctional habits or rituals; for example, the child may only take a certain route to school, or only eat one specific food at each meal. There may also be a specific sequence in which events need to occur, and any upset in the expected chronology of activities will likely not be tolerated. For instance, the child may want to read the same book every night before brushing his teeth, and these activities must be done in this exact order. According to the NIMH, it is possible that for these children, “order and sameness lend
some stability in a world of confusion” (NIMH, 2008). Attempts to convince the child to stray from his routine will most often result in tantrums. This inflexibility can be tremendously taxing on parents, as toys, books, etc., can be easily misplaced. An autistic child experiences “great distress if an object is lost” (Wing, 1966, p. 13), and will strongly resist any attempts to compromise in such a situation.

Owing to the fact that autistic children are often unable to regulate their emotions, when they are angry and or frustrated, they often engage in what are considered “immature” behaviors, such as crying, or inappropriate verbal outbursts (NIMH, 2008). This lack of emotional control also manifests itself in the forms of disruptive behavior, and in both, inward and outwardly directed physical aggression. In the book *Early Childhood Autism*, author J.K. Wing (1966) notes that “outbursts of rage, tears, stamping and kicking are common,” (p. 14), and according to the NIMH, these children “have a tendency to lose control” (2008). Since these children do not know how to deal with feelings of anger and frustration, “they may break things, attack others, or hurt themselves,” often by banging their heads, pulling their hair, or biting their arms (NIMH, 2008).

Another symptom seen in autistic children is sensory abnormalities, as in these children, the brain is “unable to balance the senses appropriately.” Many autistic children are “highly attuned or even painfully sensitive” to certain sounds (NIMH, 2008). A common feature of autism is “auditory avoidance,” at which time the child is overwhelmed by the volume of auditory stimuli, and he “covers his ears, and becomes distressed” (Wing, 1966, p. 8). Not only are these children hypersensitive, their actual reaction to the sound is abnormal. Wing asserts that the “child may not react to a loud noise behind him, but turn at the rustle of a paper” (Wing, 1966, p. 7-8). It is also possible that the child does not respond to any auditory stimuli at all, as
“non-reaction to noise is typical” (Wing, 1966, p. 7). This includes a lack of response to human voices, and at first, many parents worry that their child is deaf (Wing, 1966, p. 5).

Unusual sensory experiences are also prominent when it comes to an autistic child’s sense of touch, to the effect that a child “may bash his head against a wall and not wince, but a light touch may make (him) scream with alarm” (NIMH, 2008). It is also not uncommon for an autistic child to have an “insensitivity to pain or cold” (Wing, 1966, p. 11). These abnormalities in sensory functioning are especially evident when the child is in a strange or crowded place, as his senses are easily overwhelmed by a congested environment. When the sensory capacities’ of these children are overcome by external stimuli, they may “cover their ears and scream” (NIMH, 2008).

In addition to abnormalities in the senses, investigations have documented attention deficits in children with autism (Prior & Ozonoff, 1998, p. 68). According to Prior and Ozonoff (1998), even autistic children who have IQs above 70, and are considered high functioning, “appear to have difficulty moving their attention from one spatial location to another” (p. 68). In addition to being unable to shift attention successfully, these children are unable to pick out what is important in terms of input from the environment, and they are easily distracted by irrelevant stimuli” (Burack, 1994).

More severe than deficits in attention, however, is the mental retardation that is also common amongst autistic children. When tested on all aspects of intelligence, autistic children score in within the mentally retarded range, which on an IQ test, as prescribed in the DSM-IV, is a score of 70 or below. Some even fall into the “severely subnormal range” of intellectual functioning (Wing, 1966, p. 21). This lack of success on intelligence tests may be partly attributable to the fact that IQ tests measure one’s aptitude in a variety of areas, however,
children with autism “may be normal” in certain subjects, but “especially weak” in others; for example, they “may do well on the parts of visual skills but earn low scores on the language.” (NIMH, 2008).

Another co-morbid disorder that is often seen in autistic children is the development of seizures, usually beginning in adolescence. As many as a quarter of autistic children will develop seizure, which are caused by “abnormal electrical activity in the brain,” and can lead to the “temporary loss of consciousness, body convulsion, unusual movements, or staring” (NIMH, 2008).

Once deviations from normal functioning have been identified, the child in question undergoes a screening, and then a diagnosis can be made. There are several factors that are associated with making an accurate diagnosis of autistic disorder. At present, the most widely used screening tool for infants and toddlers is a checklist called the Checklist for Autism in Toddlers (CHAT). This process is administered after a child has been identified as at risk candidate for developing this disorder, which is often around 18 months of age. The CHAT consists of nine parent-report items, and five items observed by a doctor or specialist, which are based on “eye gaze, following point, pretend play, pointing on request, and constructional play” (Robins & Dumont Mathieu, 2006, p. 113). If the CHAT suggests autism, it is followed by an in depth assessment to identify the right course of action for the child. The CHAT is considered to be the best screening tool currently available; however, it may incorrectly diagnose a child with autism who simply suffers from severe developmental delays, and may miss children whose early symptoms of autism may be mild or still in their initial stages (Kabot, 2003). Even with these limitations, however, the CHAT is still considered to be “a highly specific screening instrument for autism” (Robins & Dumont-Mathieu, 2006, p. 113).
Another widely used assessment tool, specifically designed for use by autism specialists, is called the Screening Tool for Autism in Two Year Olds (STAT). The main difference between the CHAT and the STAT is that the STAT “was developed as a second stage screening instrument to differentiate children with autism from children with other developmental disorders” (Kabot, 2003, p. 28). In addition, the STAT includes a larger variation of items that focus on interaction, and none that require language ability (Stone et al., 2000, p. 608). The fact that this test hones in on a child’s ability to interact, helps to identify the children who may need a more comprehensive evaluation. The STAT has been described as “a promising (second level) screening tool for autism in children between two and three years old” (Dumont-Mathieu & Fein, 2005, p. 257).

Unfortunately, there is no scientific test that will result in the immediate diagnosis of autism. Accurately evaluating the disorder is an ongoing, time consuming process. In many cases, specialists in autism spectrum disorders carry out multidisciplinary evaluations of the child on based on social interaction behavior, language ability, nonverbal communication, motor skills, cognitive status, adaptive behaviors, and atypical behaviors (Kabot, 2003, p. 29). Once the child has been screened, if he continues to show warning signs for autism, the diagnostic phase begins.

Most children are diagnosed by the age of three. According to the NIMH, “the earlier the disorder is diagnosed, the sooner the child can be helped through treatment interventions,” which can be significant in terms of prognosis (NIMH, 2008). The most notable illustration of the potentially remarkable outcomes of early intervention was put forth by Ivar Lovaas (1987), “in his report that nearly half of his young participants with autistic disorder achieved normal intellectual and educational functioning by first grade” (Harris, 1998, p. 201). Research is
showing promise that it may be possible to detect the disorder as early as 18 months (Baron-Cohen et al., 1993, p. 101), but as of now, it is “estimated that only 50 percent of children are diagnosed before kindergarten” (NIMH, 2008). The hope for the future is to have the ability to accurately recognize the disorder by one year of age, or even younger, with the ultimate goal being “diagnosis at the youngest age possible” (NIMH, 2008). In order to advance toward this goal, it is recommended that “pediatric primary care providers incorporate standardized developmental screenings within the developmental surveillance occurring during well-child care visits” (Robins & Dumont-Mathieu, 2006, p. 112), which are frequent at young ages.

The next step in the evaluation of these children involves the use of the most widely used standardized assessment tool, known as the Childhood Autism Rating Scale (CARS), designed to help diagnose autism in young children. CARS is particularly valuable when it comes to making a distinction between individuals with autism and individuals with other developmental disorders (Rellini et al., 2004, p. 706). Owing to the fact that this test is fairly easy to administer, it can be used in a number of settings, such as in early intervention programs, or in developmental diagnostic centers. The first thing many parents ask when confronted with their child’s diagnosis is “‘How severe is my child’s autism?’” (Volkmar & Lord, 1998, p. 12), and it is, therefore, beneficial that CARS also includes a severity rating. This enables the diagnostician to make a more accurate appraisal of the child’s prognosis.

While the exact cause of autism is still unknown, an underlying common feature in those with the disorder is an abnormality in the brain’s structure and function. Through the use of technology, specifically brain scans, researchers have been able to assess the brain function of typically developing children, and compare them to those of children with symptoms of autism. Such comparisons have revealed differences in both the shape and the structure of the brain in an
autistic individual (Sparks et al., 2002, p. 184). Current research attributes the development of these brain abnormalities to a genetic susceptibility, as unstable clusters of genes interfere with the brain’s development. According to the most current NIMH research, scientists “have pinpointed two specific sites within the genome, each conferring a different type of genetic risk for autism” (2008). These findings support the assertion that “genes are critical for development of brain circuits impaired in autism” (NIMH, 2008). According to NIMH director, Dr. Thomas R. Insel, “autism is highly heritable” (NIMH, 2008). Autism is now thought to be more genetically linked than bipolar disorder, schizophrenia, alcoholism, and antisocial behavior, and some even go so far as to assert that “autism is ( . . . ) one of the most heritable of all psychiatric conditions” (Szatmari & Jones, 1998, p. 109).

In addition to genetics, factors within the prenatal environment, such as a stressful pregnancy or delivery complications, and postnatal environment, such as viral infections or exposure to environmental chemicals, are being examined as possible contributors to the development of autism. Studies have revealed higher incidence rates of obstetric complications in pregnancies involving the gestation and birth of autistic persons (Poustka, 1998, p. 133). However, it is possible that these complications are a result of a prenatal abnormality and subsequent susceptibility, (Poustka, 1998, p. 134) as it is “unlikely that birth complication factors are directly responsible for the etiology of autism” (Poustka, 1998, p. 135).

There has been profound debate in recent years over the possible role vaccinations may play in triggering autism. The most controversial issue regarding the cause of autism is the correlation between autism and mercury exposure. Special attention is given to mercury over other toxins, because of its proven association with damage to the brain and nervous system, which are the areas most affected in autism.
According to a report by the Environmental Working Group (EWG), in 1988, the CDC “recommended important new additions to the nation's infant immunization program, including three Hepatitis B immunizations, and three Haemophilis B shots—all delivered by six months of age” (EWG, 1998). In response to this CDC recommendation, drug companies supplied all of these vaccines in multiple-dose containers, which were preserved with the mercury-based, antibacterial, thimerosal. The EWG reports that neither the CDC, nor the FDA, were apprehensive as to the effects of these relatively high doses of mercury (thimerosal being 49 percent ethyl mercury), to which newborn babies and infants would be exposed through these shots (EWG, 1998). In 2002, thimerosal was removed from childhood immunizations at the urging of the public health services and the American Academy of Pediatrics (EWG, 1998).

Based on an eighteen-month investigation by the Environmental Working Group, scientists have pinpointed a specific metabolic impairment in autistic children that they consider to be a “biomarker” for the development of the disorder. This metabolic malfunction leaves these children especially susceptible to the damaging effects of mercury and other toxic chemical and metal exposures ((EWG, 1998). This particular metabolic failure manifests as, “a significant imbalance ( . . . ) in glutathione, which is the body’s most important tool for detoxifying and excreting metals” (EWG, 1998).). When compared to healthy children, autistic children show significant deficits in every one of five measurements of the body's ability to maintain a healthy glutathione defense. These findings provide strong evidence that if these children were exposed to mercury, or another potentially toxic compound, they would be much more sensitive to the harmful effects.

This idea that there is an innate vulnerability in a small percentage of children ignites major concerns over studies that have found vaccines containing mercury to be safe. The
epidemiological studies that evaluated the relationship between autism and thimerosal have assumed that all children have the same resistance to chemical exposure. To accurately assess the potential harm from shots containing mercury, researchers would need to compare children with the same metabolic capabilities, and therefore, the same level of susceptibility, which, based on these findings, cannot be done. The discovery of a significant glutathione deficiency in autistic children provides a biological basis for tying together the many features of autism, which have baffled researchers for decades.

This new evidence of a susceptibility has lead to widespread support for the advancement of funding and research into the biological paths and genetic make-up that may result in some individuals being more vulnerable to mercury, as well as to a host of other environmental toxins. The hope is that future research will discover the exact mechanisms that lead to the onset of this disorder; however, until that day comes, the focus must remain on early identification and treatment to ensure an optimal prognosis.

At present, there is no single best treatment program for autism; however we do know that children with this disorder “respond well to highly structured, specialized programs” (NIMH, 2008). Over past several decades, society has made extraordinary strides in both the assessment and treatment of children with autism. Since there is no cure for autism, the goal of treatment has been described as fostering those with autism to become “fully functioning members of society” (Kabot, 2003). The current focus of treatment is on building social skills and language, while simultaneously intervening to eliminate “dangerous or disruptive behaviors such as self-injury or aggression” (Harris, 1998, p. 195).

Evaluating and deciding which treatment option will best suit a child’s needs, can be an overwhelming process for the professionals involved with the child. There are significant
individual differences when it comes to the effectiveness of treatment programs in autism, and in some cases, all specialists have to go on when assigning a child to a program is trial and error. An illustration of the potential achievements of treatment possible through these programs, can be seen in Wing’s assertion that “a child who may be completely mute, withdrawn and impossibly behaved at the age of 4 may, by the age of 10, be affectionate, able to look after himself and talk in a simple fashion, able to read almost up to his age level (Wing, 1966, p. 7).

Although there is very little scientific research documenting the effectiveness of special education programs for young children with autism, studies show that early intervention approaches tend to be the most successful. Experts agree that intervention should be provided at the earliest age possible, as that provides the child with the best chance of developing a functional communication system that allows him to express his needs appropriately, halting the “development and practice of nonproductive or interfering behavioral repertoires” (Kabot, 2003).

It is also important when it comes to treatment to develop an intervention hierarchy, deciding which symptoms are the most pressing and require immediate attention. For example if an autistic child throws frequent “severe tantrums, is not toilet trained and does not speak, one needs to decide where to begin treatment” (Harris, 1998, p. 196). A treatment specialist most often chooses to target the physically harmful behaviors first, as “self-injury is usually more urgent than toilet training” (Harris, 1998, p. 196).

Professionals agree that is important to focus treatment on building social skills and language ability, while simultaneously intervening to eliminate “dangerous or disruptive behaviors such as self-injury or aggression” (Harris, 1998, p. 195). The programs should provide activities that focus on the progression and advancement of these skills, and in doing so, one
must follow the child’s lead, and participate in “child-initiated interactions to improve attention, engagement, reciprocal interaction, and communication” (Kabot, 2003).

The final area of agreement on the use of carefully planned, individualized systematic instruction based on the principles of applied behavior analysis (ABA). This treatment approach is based largely on the ideas of behavioral psychologist, B.F. Skinner; however, Ivar Lovaas is considered to be the father of this approach. ABA attempts to manage behavior through the reinforcing of effective behaviors and the eliminating of undesirable ones, and in the case of autism, research has shown ABA to be effective in achieving its goals, by “reducing inappropriate behavior and in increasing communication, learning, and appropriate social behavior” (NIMH, 2008). ABA is an overarching tactical approach, which includes a number of intervention approaches and programs that are based on behavioral principles, for example, verbal behavior analysis, which targets communication skills (Kabot, 2003). In terms of the promotion of language, recent research has shown the benefits of positively reinforcing any effort on the part of the child to utilize verbal communication, “regardless of the quality of the attempt.” Research has found that this will most often result in “more speech than using an approach in which only closer and closer approximations of a goal are accepted for reinforcement” (Harris, 1998, p. 198).

According to Lovaas, “Given a group of children who show the kinds of behavioral deficits and excesses evident in our pretreatment measures, such children will continue to manifest similar severe psychological handicaps later in life unless subjected to intensive behavioral treatment that can indeed significantly alter that outcome” (Lovaas, 1987). Through his work, Lovaas reveals that optimal results are most often seen after a long term, “intensive one-on-one child-teacher interaction for 40 hours a week.” (NIMH, 2008). Using ABA, Lovaas
conducted an experiment based on behavior modification treatment for two similar groups of young autistic children, and the advancements he saw were remarkable. The words “normal functioning” were used to describe a number of the subjects who graduated from his study (Lovaas, 1987).

Unfortunately, the evaluation of current educational curriculums and treatment options has fallen behind due to the dramatic increase in the number of children being diagnosed with these ASDs. This lack of feedback on the effectiveness of programs forces parents and professionals to make crucial decisions, which immensely impact the extent of the progress the child makes, based on minimal information. The treatment specialist must provide assistance to the parents by objectively discussing the available treatment options, making recommendations based on scientific research available, and sharing information about discredited treatment approaches.

The New York State Department of Health’s Early Intervention Program states that “the importance of constant review and revision of the educational and therapeutic approaches to intervention” cannot be underestimated. They advocate the continuous adjustment of programs “when a child is not making progress” (Kabot, 2003), which, of course, requires that the progress of these approaches be under close surveillance. The treatment specialist should periodically review the child’s situation to ensure that he is making progress, and help to troubleshoot the program to make any necessary changes in order to ensure maximum success.

The main objective when treating children with autism is to facilitate the child’s spontaneous demonstration of more varied, appropriate, and productive ways of interacting and communicating. Autistic child adept in these areas will be more likely to lead an independent, and socially integrated life as an adult. Further behavioral studies are needed to identify the
patterns of interaction with the social and the physical environment that lead autistic children to
develop the maladaptive symptoms associated with autism. Research states that “this will permit
a shift from the symptomatic treatment of autism toward a focus on the causal factors that, when
untreated, lead to autistic symptoms” (Bodfish, 2004).

Society has progressed in the treatment of autism to the point where we know much more
about the way in which to effectively manage several of the heartbreaking symptoms associated
with the disorder, and about how we can help those with autism to learn new skills. There is
hope for future developments in this area that will include “not only better studies of existing
forms of treatments,” but also an new proposals for prospective treatment research with the goal
developing a more “novel treatment approach that more deeply impacts the core features of the
disorder” (Bodfish, 2004).

The most current news in the treatment of autism comes from the NIMH, who announced
on April 1, 2008, that several significant research grants have been awarded to the Autism
Centers of Excellence (ACE) program. These grants will finance research on a variety of autism
related issues, including “early brain development and functioning, social interactions in infants,
rare genetic variants and mutations, associations between autism-related genes and physical
traits, possible environmental risk factors and biomarkers, and a potential new medication
treatment” (NMIH, 2008). Hopefully, this research will be a stepping stone in furthering our
understanding of this complex disorder.

References


