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Evidence-Based Interventions for Students on the Autism Spectrum

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The Individuals with Disabilities Act (IDEA) and No Child Left Behind (NCLB) legislation both demand that schools utilize scientifically supported, evidence based methods. Yet, outside of applied behavior analysis there are few well-designed studies supporting interventions for our students on the autism spectrum. This is particularly true for those who are in mainstream educational placements. In scientific research, the gold standard is the randomized, double blind study, yet in so many aspects of educational practice for students on the spectrum such research does not exist. Factors such as a reluctance to place children in a potential no-treatment group, the presence of complex, comorbid conditions eliminating many potential subjects from studies, and the fact that more mildly affected (and more likely to be mainstreamed) students may not be diagnosed or included in such research all contribute to the difficulty of conducting specific treatment research on interventions for students on the autism spectrum, particularly those with more typical academic abilities.

In reviewing the literature on interventions for students on the spectrum, it is clear that it may be more productive to address a deficit a student has rather than a diagnosis that may have been given. Then a wide array of evidence-based interventions would become available to utilize, rather than only those that have been specifically tested on groups of students on the spectrum. For example, executive function (EF) problems affect individuals with ADHD, Asperger Syndrome, Nonverbal Learning Disability, and others with no diagnosis at all. We can

confidently utilize proven organizational strategies for a student on the spectrum who struggles with that aspect of EF if we have determined that that individual has the deficit that the intervention was designed to address, without being concerned that it has not been double blind tested on students with an ASD. Thus, to be answering the mandate for more scientifically proven educational techniques, we must come to recognize that autism spectrum conditions are highly variable and that students on the spectrum need to be individually assessed and supported in ways specific to their particular needs.

There is an evidence base for supporting developmental characteristics many students share. In bringing this rich research literature to bear on the diverse problems students on the spectrum present, we have a large pool of possible interventions with ample evidence to support their use for individuals who share the problem, if not the diagnosis. This philosophy is consistent with current thinking on the transdiagnostic approach to treatment, where underlying mechanisms, rather than diagnostically driven categories, are targeted for intervention.

Common issues for students on the spectrum include social isolation and bullying, social skills deficits and socially inappropriate behavior, the development of empathic skills and perspective taking, emotional dysregulation and over-reactivity, aggression, disorganization and poor executive function, rigidity and difficulty with transition, anxiety, depression and other psychiatric issues. There exists a general research literature addressing each of these issues that we can draw upon to develop an individualized education plan for our students on the autism spectrum. Let's examine each issue and posit some existing solutions.

Social Isolation and Bullying

School-based bullying programs have demonstrated only modest effectiveness. Researchers advocate that we need to concentrate more specifically on those who bully and those who are victimized. There are evidence-based approaches to help children on the spectrum with these skills through the development of improved social thinking and behavioral skills.

Social Skills research tells us that interventions need to occur in authentic settings to maximize maintenance and generalization, need to be more intensive than the typical once weekly session, should use manualized programs to counterbalance skill differences in personnel, need to be individually designed and very specifically described on the IEP, and should have an explicit plan for generalization. It is critical to remember that in the absence of additional treatment, mainstream placement has NOT been shown to increase social interaction (McConnell, 2002.)

The developmental literature tells us that the negative effects of peer rejection can be ameliorated by having just one friend (Parker & Asher, 1993b). So helping a child find someone who shares interests and can be a regular interaction partner

can have a significant effect on positive personality development. Making an effort to find connections outside of typical classroom friendships can be invaluable for students on the spectrum.

Social Skills Group Models

There are two manualized social skills training models that have recently published positive findings for social skills improvement. They are Children's Friendship Training (Frankel et al., 2010) and Comprehensive School-Based Intervention (CSBI) Manualized Social Treatment (Lopata et al., 2010, 2012.) Children's Friendship Training addresses conversation skills, peer entry, expanding and developing friendship networks, handling teasing, practicing good sportsmanship, and good host behavior. The specific components designed to focus on these issues include instruction on simple rules of social behavior, modeling, rehearsal and performance feedback, rehearsal at home, homework assignments for practice and generalization, and coaching by parents during assigned peer play. The Comprehensive School-Based Intervention (CSBI) Manualized Social Treatment includes manualized instruction and therapeutic activities (Skillstreaming, 2005), face-emotion recognition, cooperative activities and problem solving, a non-literal language curriculum, a behavioral system, and homework and parental participation. Although neither model was developed uniquely for students on the autism spectrum, the manualized programs could easily be set up to serve this population as the elements addressed are ones that such students often manifest. An assessment of a particular student's social profile and underlying skill deficits should be the guideline for inclusion for participation rather than a diagnosis driven selection.

Social Thinking

Social thinking is an alternate approach for improving the social cognition of students who struggle with the social aspects of life. It was developed by Michele Garcia Winner and is based on cognitive behavioral therapy (a well-supported therapeutic methodology for changing cognitions, and consequently emotions), visual cues and concepts, and pragmatic language development. The approach, and the continual enrichment by professionals of various backgrounds in the last few years, provides a wide range of possible interventions that can be applied based on an individual student's particular set of social cognition strengths and deficits. The program was developed to address needs, rather than particular diagnoses. Students learn how their own social minds work, how their behaviors affect the way others perceive and respond to them, and how these interactions affect their own emotions and relationships in various social contexts. The goals of a social thinking program include recognizing that they and others have different perceptions and abilities to process social information, learning to navigate through their social thinking, utilizing social interaction and social communication toward more rewarding outcomes, and learning to better adapt and respond to the people and situations around them. The social skills issues that are addressed and integrated include concept formation, theory of mind and perspective taking, executive function (cognitive organization, multi-processing, emotion naming and regulation),

and social information processing. There is a strong evidence base for all the components of social thinking which are employed based on a student's individual needs and can be utilized in an individual or group modality.

Developing Empathic Skills

Although students on the autism spectrum are often considered to have poor skills at empathy, the reality is somewhat more complex. Research tells us that individuals on the spectrum often have emotional empathy, that is, the ability to share feelings with others and show compassion (Dziobek et al., 2008). However, they often lack ability to ascertain another's perspective, making it difficult to share in something they do not recognize or understand. Thus an appropriate intervention would be to specify why an individual has difficulty in the recognition of others' perspectives and train the specific deficit that interferes. Contributing factors to such problems with cognitive empathy could include prosopagnosia (poor facial recognition), poor appreciation of nonverbal cues, lack of mental flexibility, alexithymia (impaired recognition of own emotions), difficulty with emotional regulation or other executive function skills. Through specific assessment, which aspects are salient for a particular individual could be identified and then supported utilizing some of the following evidence-based interventions. F.A.C.E. (Facial Expression, Awareness, Compassion, Emotions) provides information about how to learn to recognize signs of emotion in the face. SETT (the Subtle Expression Training Tool) teaches recognition of very small, micro signs of emotion. METT (the Micro Expression Training Tool) is more advanced training to increase people's ability to spot tiny facial signals. All stem from the seminal work of Paul Ekman (Ekman, 2003). In addition, other specific materials have been developed to assist children and adults on the spectrum to conceptualize, understand, or predict emotional states in other people, by Simon Baron-Cohen. The Mindreading DVD (www.jkp.com/mindreading), for children and adults, and the Transporters DVD (www.thetransporters), for younger children have been well researched and help in the development of some of the underlying skills needed for empathy. Many of the elements of the Social Thinking curricula also support the necessary underlying skills for empathy.

Executive Function

Emotion regulation is one of the executive function skills. Emotions are influenced by the meaning we assign to particular occurrences. Regulation includes the physiological responses that activate arousal in preparation for action, the communication of reactions, feelings and intentions through facial patterns, postures, and gestures, the reinforcement of patterns of emotions through social interaction with family, peers, and authority figures, and the modulation of expression. So, emotion regulation encompasses many cognitive and organizational elements that can be a challenge for individuals on the spectrum. Schools, families, and professionals can be helpful by teaching understanding of one's own emotions in a social context (Winner, 2007), utilizing self advocacy curricula to encourage positive expression of needs and wants before dysregulation occurs (Paradiz, 2009), and changing with way inaccurate thinking patterns are negatively affecting

behavior through evidence-based cognitive behavior therapeutic (CBT) approaches (Attwood, 2004, 2008; Gaus, 2007).

Other executive function skills include shifting/flexible thinking, initiation, and organization, and working memory. Although there are multiple evidence-based approaches to remediating deficits in these areas (Meltzer, 2010; Dawson & Guare, 2012), frequently unless there has been a specific effort to include them through the IEP process they are often not well addressed and students continue to struggle and become discouraged. There are no specific patterns of executive function deficit considered to be characteristic of students on the spectrum, so an individualized assessment that pinpoints deficit areas for remediation is critical. There are executive function screening tests that identify areas of functional weaknesses which can direct teachers to develop individualized supports for their students who struggle with these underlying skills (Gioia et al., 2005; Barkley, 2011).

Aggression

There is no specific treatment for aggression. The treatment and management approach must emerge from a thorough understanding of the unique causes for each student. There is an evidence base for many of the causes but not for “aggression for students with autism spectrum disorders.” Sometimes the characteristics specific to the spectrum contribute to behavioral aggression such as rigidity, resistance to deviations from expectancy, difficulty with transitions, and sensory overload. Other times, issues that many students may manifest affect students with autism spectrum disorders. These may include processing issues, emotional dysregulation, deficient social skills, fear and confusion, social anxiety, and agitated depression, and sometimes the inadequacy or side effects of prescribed medications. Developing a comprehensive understanding of the etiology of aggression is key to finding solutions. There are evidence-based interventions for many of the underlying issues for verbal and physical aggression.

A functional behavioral assessment is the typical response for problems of aggression. It is critical that such an evaluation assess the etiology of the aggression, not simply its behavioral manifestations. Accompanying evaluations of sensory processing, executive function, uneven cognitive development, assistive technology needs, and pragmatic language can give a much more complete picture of causes and suggest creative solutions. Once the specific elements are identified, there are many evidence-based interventions that can be brought to bear on the presenting problem, including many of those specified above.

Mental Health Issues

Many students on the spectrum have co-occurring mental health issues, such as anxiety and depression. It is important to seek support from professionals who have a good understanding of the underlying neurobiological issues associated with the autism spectrum, the life differences that can occur for these individuals that limit their opportunities to gain more typical skills, and the identification and

treatment of co-occurring mental health conditions. Local autism organizations can usually identify professionals who have this kind of orientation. When providers do not have this expertise, under and over diagnosis can occur, which only serves to exacerbate existing problems. Families need to investigate the knowledge base of professionals purporting to provide treatment for those on the autism spectrum and insure that a thorough knowledge of the wide range of evidence based interventions that can benefit children on the spectrum are within that person's arsenal of treatments. Simply being listed on an insurance list of providers does not guarantee this expertise. Having such knowledge and a willingness to cooperate with school personnel is the most helpful combination for comprehensively dealing with the complicated issues children with ASDs present.

School personnel should also keep in mind that they may be critical in the recognition of co-occurring mental health problems that should be evaluated by a specialist. Depression and anxiety symptoms are more prevalent in the population of children, adolescents, and adults on the spectrum than they are in neurotypical groups. Post Traumatic Stress Disorder (PTSD) is increasingly being recognized, as well, as so many on the spectrum experience traumatic and inescapable social experiences that produce long-term effects. Effective treatments for these conditions are well documented, but they must be recognized as something separate and treatable, rather than simply the individual's autistic features.

The School Perspective

School personnel by definition need to be generalists who can deal with a wide array of student issues and it is not realistic to expect them to be autism experts. However, it is important that they can respond to the mandate of providing evidence-based interventions for all classified children. For students on the autism spectrum, the best evidence-based intervention is to develop a flexible team willing to learn new skills to address the unique needs of each student on the spectrum and to create a plan based on an accurate assessment of these needs incorporating expert, specialized knowledge to tease out the unique issues of each student presents. Issues of importance in effectively utilizing evidence-based procedures include using manualized treatments, having the knowledge to select appropriate interventions that will have individual effectiveness for particular problem areas, employing consultants who can provide training to school personnel, and developing a school team that truly understands the wide array of possible interventions that can be brought to bear on the complicated issues of students on the autism spectrum.