

Strength-Based Assessment for Children With Autism Spectrum Disorders

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Despite improvements in interventions for children with autism, assessments tend to focus on their social, cognitive, and behavioral deficits, without similar systematic examination of their strengths. Strength-based assessment (SBA), which has been used in work with children with milder behavioral disorders, may also have value for individuals who have autism. Although not supplanting usual assessment procedures, SBA provides a method for identifying personal, familial, and broader contextual strengths. Research outside the area of autism has found that SBA can be a useful addition to assessment protocols because it provides specific information on assets that can be incorporated into interventions. Further, SBA has the potential to affect the attitudes and beliefs of parents and educators involved in the assessment, creating greater hope about the ability of the child to function well and contributing to a stronger bond between the assessor, the child, and their family. This article describes ways in which SBA can be added to typical assessment protocols for children with autism. Examples are provided on how to identify and utilize strengths that can be used for planning interventions and for building more effective working relationships between clinicians and children with autism and their families. Areas for future research are also discussed.

DESCRIPTORS: assessment, autism, strength-based assessment

The purpose of this article is to describe an assessment approach that focuses on the strengths of children with autism spectrum disorders and their families. Such an assessment approach may directly lead to suggestions for improved interventions and may enhance the relationship between the family and the professionals working with them. This is important, as children with autism are experiencing increased success in response to new interventions, with some reported to overcome most or all of their symptoms (Koegel, Koegel, Shoshan, & McNERney, 1999; Lovaas, 1987; McEachin, Smith, & Lovaas, 1993; Volkmar, Lord, Bailey, Schultz, & Klin, 2004). Nevertheless, the perspectives of professionals who assess these children are typically deficit oriented. Professionals re-

port that they have difficulty giving the diagnosis of autism to families because of its negative implications. Many professionals also report that they would be “devastated” if their own child was diagnosed with autism. In a recent study (Nissenbaum, Tollefson, & Resse, 2002), a majority of parents reported that they got a negative prognosis from the professional who diagnosed their child. Adding to this challenge is the fact that there is little congruence in the perceptions of professionals and parents regarding the future of a child with autism. That is, professionals tend to feel that parents have unrealistic views of their child’s future, with most expectations being too positive. In contrast, most parents believe that professionals do not have a positive enough outlook with regard to their child’s future (Nissenbaum et al., 2002).

There is no doubt that autism adversely affects functioning in a wide variety of areas, including communication, socialization, and behavior. However, successes with new interventions suggest that there is realistic hope that many children with autism cannot only have fewer adverse experiences, but also share positive experiences within the mainstream of society. Recently, the field of *positive psychology* has grown, largely in response to perceptions that psychologists were unduly focused on the reduction of pathology while neglecting other important aspects of the human experience that allow individuals to flourish (Seligman & Csikszentmihalyi, 2000). Positive psychology emphasizes the development of factors such as the capacity for love, courage, perseverance, forgiveness, originality, future mindedness, spirituality, and optimism. Investigators have suggested ways in which positive psychology could be integrated into the schools for children with and without special needs, from helping youth to actively strive toward social, athletic, and academic goals (Terjesen, Jacopsky, Froh, & DiGiuseppe, 2004) to identifying and promoting factors related to protective school environments (Clonan, Chafouleas, McDougal, & Riley-Tillman, 2004). The importance of enhancing similar strengths and assets in the adults who control the child’s environment has also been noted (Sheridan, Warner, Cowen, Schemm, & Clarke, 2004).

For children who have autism, the promotion of positive personal, family, and school characteristics is particularly important given the stress and uncertainty associated with this condition (Koegel, Bimbela, & Schreibman, 1996; Koegel, Brookman, & Koegel, 2003;

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Moes, 1995). Studies on families with children who have disabilities, including autism, find that optimism is an important component of effective parent education (Azar, 1997; Kessler, 2004). Methods that increase parental optimism are likely to improve the relationships between parents and the professionals who work with their children, as well as potentially improving child-related outcomes (cf. Brookman-Frazee, 2004).

Whereas some intervention procedures used with children who have autism incorporate knowledge about the child's and family's strengths and preferences, information about these assets often are not an integral part of the child's evaluation. More disturbing is the fact that parents are involved in assessment and intervention only about a quarter of the time (Snell, Voorhees, & Chen, 2005).

This paper discusses the need to systematically utilize strength-based assessment (SBA) with children who have autism, by either adapting or developing SBA measures for use with this population. It is hoped that the systematic measurement of child and family strengths as part of a comprehensive assessment process can direct intervention efforts, as well as increase congruence between the outlooks of parents and professionals, reduce parental stress, and increase parental hope, perseverance, and optimism, consequently improving intervention outcomes.

What is SBA?

SBA has been defined as "the measurement of those emotional and behavioral skills, competencies and characteristics that create a sense of personal accomplishment; contribute to satisfying relationships with family members, peers, and adults; enhance one's ability to deal with adversity and stress; and promote one's personal, social and academic development" (Epstein & Sharma, 1998, p. 3). Thus, SBA encompasses different measures that provide information related to positive child development. The movement toward SBA has been influenced by a number of factors. These include the family-focused approach for working with children in special education (e.g., Dunst, Trivette, & Deal, 1994) and positive psychology's adoption of intervention goals that move beyond reductions of distress to the development of wellness and competence (Seligman & Csikszentmihalyi, 2000). Interest in the application of positive psychology and SBA to the schooling of children with disabilities is seen in recent publications of special issues on these topics in *Psychology in the Schools* (Chafouleas & Bray, 2004) and the *California School Psychologist* (Jimerson, 2004). As researchers and practitioners consider how to integrate the information obtained on positive functioning through SBA with the information obtained on educational and behavioral needs through usual assessments, it is important to understand the range of measures currently used in SBA and consider how they can be applied, or adapted, to serve the purpose of individuals with more severe disabilities, such as autism.

To identify consensual understandings of SBA practices, Lubbe and Eloff (2004) conducted focus groups, comprised of educational psychologists, who responded to the question, "What is strength-based assessment in educational psychology?" The responses were categorized into four domains: the need to focus on assets; the need to examine community as well as individual resources; the importance of using collaborative skills to define assets that are meaningful to both parents and educators; and the need to be personally self-reflective in order to recognize assets in clients who are culturally different from the investigator. SBA assumes that every child and family has strengths, and that the locus of those strengths could lie in the child, their family, or their educational or social contexts (Rhee, Furlong, Turner, & Harari, 2001).

Why use SBA?

SBA augments and responds to limitations in the traditional deficit-oriented assessments used to identify students' weaknesses to qualify them for special education. SBA is not intended to replace educational assessments used to identify areas of needed instruction. Rather, by providing information on the child's "assets," including personal, family, and community resources, SBA provides a broader perspective for developing a child's educational plans (Rhee et al., 2001).

There are at least four specific ways in which SBA has been used to contribute to intervention planning for children with disabilities. Although most studies to date have been conducted with children who have mild to moderate learning disabilities or behavior disorders, it is hypothesized that similar benefits can be gained in using SBA with children who have autism. First, positive personal or family characteristics can assist in the development and implementation of intervention plans, including those designed to remediate academic or behavioral problems. For example, identification of a child's preferences can be used to motivate the child to engage in other needed, but less preferred, activities (Cosden, Gannon, & Haring, 1995; Koegel, Koegel, Harrower, & Carter, 1999) and to decrease unwanted behaviors and increase desirable ones (for a review, see Clark, Olympia, Jensen, Heathfield, & Jenson, 2004). Second, the strength-based approach can be used to address systematically contextual as well as individual assets, such as family interests and involvement, school strengths, and community resources. Third, the outcomes of SBA can, itself, change the attitudes of the child and his or her family, as well as the assessor, by increasing a general sense of hope and facilitating the development of their working relationships (cf. Cosden, Panteleakos, Gutierrez, Barazani, & Gottheil, 2004; Epstein, Dakan, Oswald, & Yoe, 2001; Rhee et al., 2001). Case vignettes (Cosden et al., 2004) demonstrate how youth who have had significant attention placed on their deficiencies may benefit from the identification of

their personal strengths, both in terms of their own self-perceptions and their recognition that important adults in their family and schools also share that awareness. Finally, a strength-based approach to assessment encourages educators and other interventionists to establish goals that go beyond repairing a child's deficits to those of helping the child and family develop a higher quality of life (e.g., Huebner & Gilman, 2004), a critical need in the area of autism.

Current Measures of SBA

Measures used for SBA vary; the most commonly used with children who have mild to moderate disabilities are standardized surveys or less formal interview questions. Several survey instruments, including the *Behavioral Assessment System for Children* (BASC) (Reynolds & Kamphaus, 1998) and the *Strengths and Difficulties Questionnaire* (Goodman, 1997), include a small number of items to identify strength-based items, although they primarily assess for deficits. The primary instrument that is used in the literature that focuses entirely on the child's competencies is the *Behavioral and Emotional Rating Scale* (BERS) (Epstein & Sharma, 1998). This scale requires parent report, whereas the more recent BERS-2 has child, parent, and teacher report forms (Epstein, 2004). The BERS, which has the greatest amount of psychometric study and support, has 52 items that address five areas of childhood strength: interpersonal strengths, which measures a child's ability to regulate his or her emotions, including the ability to manage anger and share with others; family involvement, which includes the ability to comply with rules at home and positively interact with family members; intrapersonal strengths, which assesses the child's ability to enjoy extracurricular activities and their perceived popularity with their peers; school functioning, which assesses the child's school behavior, including his or her ability to pay attention and complete coursework; and affective strength, which assesses the child's ability to express feelings, acknowledge painful feelings, and ask for help. The BERS has adequate reliability and validity in use with children who have mild to moderate behavioral problems (Winters, Collett, & Myers, 2005).

The other means of obtaining information for SBA has been parent or child interviews (e.g., Epstein, Ryser, & Pearson, 2002). Although less formal than standardized surveys, this approach can be tailored to specific child needs and appears to have strong clinical utility (e.g., Clark, 1996).

Utility of SBA for Children with Learning and Behavior Disorders

Although the importance of identifying assets as well as deficits has strong face validity, its value as an approach is dependent on whether studies find that the identification of those assets can improve educational and psychosocial outcomes. Research on this question is in its early stages, but studies of youth with a

variety of disabilities (Walrath, Mandell, Holden, & Satiago, 2004) provide support for the supposition that even those with severe disabilities will have identifiable strengths, and focusing on these strengths may be important. For example, Walrath et al. (2004) conducted an SBA on 1,838 youth who were also participants in a national evaluation of systems of care programs for youth with a variety of special needs, such as conduct disorder, depression, attention deficit hyperactivity disorder, anxiety, and adjustment disorder. All of the youth in this study were administered a scale of functional impairment as well as the BERS. This study found a relationship between functional impairment and level of strengths found on the BERS, such that youth with more severe functional impairments were more likely to have lower overall strengths. However, even for the group with the most severe functional impairment strengths were identified, particularly in affective and intrapersonal domains, thus supporting the hypothesis that youth with these types of significant psychiatric disabilities have identifiable assets.

There are few empirical studies on the utility of SBA in intervention planning, but preliminary findings are promising. In one study (Oswald, Cohen, Best, Jensen, & Lyons, 2001), 270 children identified as having emotional or behavioral problems were assessed for their level of symptoms, using the *Childhood Severity of Psychiatric Illness Scale* (Lyons, 1998); their strengths, using the BERS; and placement in homelike or non-homelike settings. The authors found that children living in homelike and non-homelike settings had similar levels of symptomatic behavior; on the other hand, children with a greater number of strengths were more likely to be living in a homelike setting. Their findings suggest that the presence of strengths affects placement even more than the presence of symptoms or other risk factors.

The use of SBA for intervention planning can also be found in several case studies on children with mild disabilities (e.g., Cosden et al., 2004; Early, 2001). Epstein et al. (2001) describe the use of information obtained from the BERS on a 13-year-old male with severe behavior problems. The investigators noted several areas of intrapersonal strength for this child, including popularity with peers, the ability to enjoy a hobby, a sense of humor, and a willingness to talk with others about his feelings. Other areas of potential strength, including family involvement and school functioning, were judged as low. The transition plan for this youth built on his strengths by engaging him in areas of interest and skills as well as counseling, while still addressing areas that needed remediation, including poor school performance and family conflict. Research and case studies suggest that incorporating the interests of children with Asperger's syndrome and autism may result in increases in socialization with generalization to other activities (Baker, Koegel, & Koegel, 1998; Koegel & LaZebnik, 2004).

Development of SBA for Children with Autism

It is argued here that although the reasons for using SBA are the same for children with autism as for children with other disabilities, the instruments and procedures for obtaining this assessment information will not be the same. Areas of strengths are likely to be different for children with autism than for children with other types of disabilities. Thus, although the BERS was developed to identify common strengths found in children with mild to moderate academic and behavior disorders, it is not likely that strengths in children with autism will be adequately captured by the same items. In fact, relatively little is yet known about areas of strength to identify in children with autism. The process of building this knowledge base can start by aggregating information obtained through parent interviews and developing surveys based on these responses.

A number of current assessment and intervention techniques used with children who have autism are congruent with SBA. Treatment interventions that focus on positive behavioral support (PBS; Carr et al., 2002), preference assessment (Cannella, O'Reilly, & Lancioni, 2005; Dunlap et al., 1994), goodness of fit (Albin, Lucyshyn, Horner, & Flannery, 1996), person-centered planning (Kim & Turnbull, 2004; Michaels & Orentlicher, 2004; Kincaid, 1996), and self-determination (Field & Hoffman, 2002; Robertson et al., 2001; Wehmeyer, 1998) all address the need to treat individuals with severe disabilities with respect and dignity and to provide them with personal choices. These treatment protocols enhance participation in community life supporting the freedom and authority of individuals with disabilities. SBA can be incorporated as an integral part of the initial and ongoing diagnostic and assessment process within the framework of other models, particularly because the current use of SBA addresses strengths throughout the individuals' lifespan, regardless of level of functioning, age, or communicative ability.

For example, PBS and functional assessment and analysis systematically identify positive replacement behaviors for children with autism. This approach rests on the assumption that the children have appropriate strengths that can be used to replace inappropriate communicative strategies. By determining the function of an inappropriate behavior and by focusing on functionally equivalent replacement behaviors to eliminate problem behaviors, these studies reconceptualize children's behavior problems as being communicative rather than being aberrant (Derby et al., 1992; Frea, Koegel, & Koegel, 1994; Iwata, Dorsey, Slifer, Bauman, & Richards, 1994; Koegel, Dunlap, & Koegel, 1996).

PBS arose as a reaction to aversive procedures used to reduce disruptive behaviors and still tends to be focused on individuals that exhibit challenging behavior. Nevertheless, identification of contexts where disruptive behavior does not occur can be invaluable in manipulating ecological variables that can build positive

behaviors (Koegel, Stiebel, & Koegel, 1998; Touchette, MacDonald, & Langer, 1985). SBA may add to this area by identifying a broad array of strengths even for individuals who do not exhibit challenging behaviors. Consideration of this information in intervention plans may reduce the likelihood of subsequent disruptive behaviors.

Similarly, preference assessments, conducted through interviews and systematic observations, have been used to identify interests and choices for individuals with severe disabilities. Research has demonstrated that the incorporation of choice into interventions results in a decrease in disruptive behavior and an increase in task engagement (Cannella et al., 2005; Carter, 2001; Cole & Levinson, 2002; Cosden et al., 1995; Dunlap et al., 1994; Dunlap, Kern-Dunlap, Clarke, & Robbins, 1991). Further, Clark and colleagues (2004) recommend that school psychologists use preference assessments to support preferences, choice, and greater autonomy for students with severe disabilities. Although preference assessments are an important aspect of SBA, the majority of these assessments have traditionally been used in limited contexts, such as reacting to challenging behaviors or low task engagement. However, the intention of SBA is to proactively examine individuals' strengths within the context of their family and community values.

Studies have also demonstrated that utilizing high interest activities or ritualistic behaviors in interventions can result in positive behavior change (Baker et al., 1998; Charlop-Christy & Haymes, 1998). For example, Baker and colleagues identified areas of high interest of children with autism, which were then used as the theme of a social game. By doing this, positive social interactions between children with autism and their typically developing peers improved. Although these interests were referred to as "repetitive" and "ritualistic" in the study, they could also be viewed as strengths, in terms of content areas available for shared interactions. In fact, some of the children in the study had "savant" skills that interfered with daily functioning. However, when used in certain contexts, the children with autism were considered the valued member of their peer groups. Reframing these procedures as SBAs provides a broader perspective on these findings, suggesting, for example, the need to examine changes in parent and teacher attitudes as well as child behavior.

"Goodness of fit" refers to the compatibility between an intervention plan, the individual, and the environmental context. That is, intervention plans need to be individualized with consideration of (a) the person whose behavior is targeted for change, (b) variables that relate to those who will implement the plan, and (c) features and systems in the environment in which intervention will be implemented (Albin et al., 1996). Goodness of fit primarily has been discussed for use with individuals with severe problem behaviors in the

context of PBS plans, but again SBA is both compatible and combinable with goodness of fit.

Person-centered planning focuses on broader issues for individuals with severe disabilities, such as choice making, gaining, and maintaining satisfying relationships, community participation, living with respect and dignity, and developing personal competencies (Callicott, 2003; Kincaid, 1996; O'Brien & O'Brien, 2002). Often, person-centered planning is discussed in the literature as a model utilized during transitions in adulthood (Browder, Bambara, & Belfiore, 1997; Everson, & Reid, 1997; Kim, & Turnbull, 2004) or to address problem behaviors (Kennedy et al., 2001). However, SBA can be used with individuals, including severe disabilities, during all chronological and developmental stages. Moreover, SBA is a proactive tool that focuses on individuals' strengths instead of reacting to challenging behaviors. Both "goodness of fit" and person-centered planning are consistent with the need for SBAs that focus on quality of life issues, conceptualizing the idea that strengths are not merely the lack of weakness, and weakness is not necessarily the lack of strength.

Self-determination focuses on providing individuals with disabilities the opportunity to engage in a meaningful life in the community with long-term relationships through personal choice and decision making. These basic rights increase the freedom and economic control, independence, and responsibility of those with disabilities and their families (Nerney, 2005; Nerney & Vining, 2005; Robertson et al., 2001). Although many argue that self-determination can and should be used with minors (Wehmeyer & Schalock, 2001) and people with significant disabilities, the bulk of the research studies have focused on older individuals with expressive verbal communication, primarily as a basis for improving the intervention programs and most importantly the lives of individuals with disabilities. Self-determination generally involves self-advocacy, self-evaluation, self-instruction, and other procedures that have been more commonly used with individuals with expressive verbal communication (see review by Karvonen, Test, Wood, Browder, & Algozzine, 2004). Despite its importance, documented by improvements in positive outcomes and quality of life, researchers have found that few educators use self-determination on a regular basis, if at all (Karvonen et al., 2004; Wehmeyer & Schwartz, 1998). Thus, the focus on SBA as a tool to use throughout the life span, including with very young children would also be highly compatible with the values and goals of self-determination.

Utility of SBA for Children With Autism

In the area of autism, emphasis has been placed on remediation of deficits, with careful assessment of deficit areas needed to affect this task. Although this is important, assessments that are limited to identification of

behaviors that need to be changed will result in natural strengths being overlooked in subsequent treatment planning. Table 1 presents examples of how the identification of strengths can direct interventions. The SBA in each of these case examples was obtained through parental interviews designed to elicit information regarding the child's strengths as well as deficits across contexts.

Although the use of SBAs with children who have autism has not systematically been examined, case studies suggest that children with severe disabilities can have their lives changed when focusing on strengths. Koegel and LaZebnik (2004), for example, demonstrated how one child with autism who repetitively played with items with his fingers was taught to draw and became a talented artist.

Finally, information obtained through SBA can be used to build parent-professional partnerships. There are a number of studies that illustrate the importance of parent-professional partnerships that focus on the child with autism's strengths. For example, Brookman-Frazer (2004) found that when the clinician engaged the parent throughout the session by eliciting input or providing the parent with choices on specific opportunities for language and implementation of intervention, as compared with a clinician directed model, there were decreases in parent stress and improvements in parent confidence. This also resulted in improvements in child affect, child responsiveness, and child engagement. Further, studies relating to acquisition of a first functional lexicon in children with autism have shown that cooperative assessment efforts between parents and professionals can result in the development of intervention programs with very positive outcomes in children with seemingly very significant communication deficits. Koegel, Sze, Mossman, Koegel, and Brookman-Frazer (2006) found that parents and professionals could use seemingly nonfunctional sounds in appropriate contexts to develop initial words in children with autism who were not demonstrating acquisition with other successful teaching methods. In addition, Koegel and colleagues (2006) showed that a parent-professional collaboration to assess low frequency words in children with autism who were essentially nonverbal (i.e., used only a few words inconsistently) could be effectively used within the context of a parent education intervention program. This resulted in rapid development of a large lexicon using these existing words within a behavioral momentum intervention program. Similarly, Schopler and Mesibov (1995) found lower levels of institutionalization for children with autism in families who have coordinated with professionals to develop the child's strengths in the context of parent education programs. Conversely, parents who did not work with professionals to teach positive behaviors to their children were more likely to institutionalize their children with autism during adolescence (Schopler & Mesibov, 1995).

Table 1
Case Examples of Strength-Based Assessment for Children With Autism

Potential areas of strength	Assessment of strengths	Interventions based on strengths
<i>What are the child's interests? How could these interests be used to facilitate social interactions or improve academic gains?</i>	Jose knows the flag of every country. He frequently talks about flags.	Make a social game involving flags so that Jose is the valued player of the game. For example, laminated pictures of flags can be placed around the playground and a caller can name a country, to which the children can run for safety. Or, have Jose lead a history lesson related to flags. Jose can help other children learn about the flags and the history of the country in relationship to their flags.
<i>How does the child adhere to rules or follow routines? How can the child's objective adherence to rules be used to facilitate the conduct of certain activities where rules are important?</i>	Sammy quickly learns the rules of all games and reminds others when they do not follow them.	Sammy could be the scorekeeper at after school sports games. When there is an argument between two students, he can be brought in to help deliberate. He can be the "judge" for disputes, and acknowledged as being "fair" to others.
<i>When does the child make eye contact or enjoy interacting with another person? Even if they are rare, are there certain times when the child does make eye contact?</i>	Mary looks at her parents when she is being thrown up and down.	Explain to Mary's parents how this is an important time they share with their child. They can expand her eye contact with her by briefly pausing after catching her and requiring longer periods of eye contact with her before continuing the activity.
<i>In what areas can the parents help with intervention? Do the parents have ideas about activities or clubs that could be beneficial to their child and peers?</i>	Jenna's mother enjoys social activities and works well with children.	Jenna's parents could run an after-school club for Jenna and her peers. Activities could be planned that meet the needs of other children (e.g., after school snacks, art, academic support) and that also build on Jenna's interests.
<i>What sounds does the child make? Does the child repeat sounds or words?</i>	Stacey tries to echo the words she hears on Sesame Street. For example, she says "coo" right after cookie monster says cookie.	Pair the echolalic word attempt with the real item. When Stacey says "coo," use a stimulus transfer procedure and gradually move in front of the screen and lower the volume until Stacey is saying "coo" to request the cookie in place of echoing cookie monster. Increase her socialization with other children who also enjoy Sesame Street.

Again, this suggests that SBA may be an important element of a comprehensive assessment for children with autism.

The following case examples illustrate the different outcomes possible when using traditional assessment alone versus traditional assessment with SBA in relation to children with autism. Information for this SBA was obtained through parent interview and child observations. These examples demonstrate how focus on the child's strengths, in addition to understanding their areas of need, can enhance intervention strategies while creating a more optimistic view of the child.

Case Examples

Example 1: Traditional Assessment Summary

Billy, a 3-year, 2-month old male, has symptoms of autism including a significant delay in communication, social deficits, and restricted interests. Typical development at his age is combining words to communicate,

engaging in pretend play, taking an interest in others, and engaging a variety of activities. However, Billy uses only two words, "bye-bye" and "milk." Numerous attempts were made to evoke additional words, but he was unresponsive and used nonverbal means, such as leading his mother by the hand, to request items. He takes no interest in other children and does not play with others nor does he play with the variety of toys that would be typical of children his age. Specifically, during the assessment, Billy played repetitively with only one musical toy, indicating a severe level of restricted interests. Billy's parents report that they attempt to work with him during much of his waking hours, but he is generally indifferent to them.

Example 1: SBA Summary

Billy, a 3-year, 2-month old male, has symptoms in the three categorical areas of autism (significant delay in communication, social deficits, and restricted interests). However, Billy has begun to use first words and interact

with his parents while using these words. He also seeks out his mother when he desires items rather than trying to obtain the items by himself. He is interested in a few musical toys, which can be used during intervention.

In the area of communication, he uses two functional words in appropriate contexts (i.e., "bye-bye" and "milk"). There are two functions of the words including terminating interactions and requesting. That is, Billy regularly uses the word "bye-bye" when demands are placed upon him or to terminate an activity. It was noted that he used "bye-bye" appropriately four times during the observation. In addition, he appropriately and spontaneously requested "milk" from his mother when he was hungry. Because he is able to use some words appropriately, these can be expanded upon to develop a more complete and complex lexicon. In the area of socialization, he seeks out his mother and leads her to desired objects. This type of requesting can be paired with verbal requests and can be expanded for use with peers. Billy was observed with a variety of toys to assess whether he was able to engage in any appropriate play behavior. Billy played with one toy during the assessment; in fact, he was able to figure out how the toy worked by turning it on and off and pushing all the appropriate buttons to listen to various musical sounds. This suggests that he understands "cause and effect" and has an interest in listening to various musical sounds. Further, because he had never seen this toy before, this suggests that he was able to generalize his ability to appropriately use familiar toys with a novel toy. In short, although Billy's symptoms would be considered severe at this point, several behaviors suggest a positive prognosis for intervention. Specifically, these are the presence and appropriate use of some words, the intentful seeking and recognition of his mother, interest in a few toys, and the ability to understand "cause and effect" as evidenced during toy play. Furthermore, Billy has exceptional family support and it is recommended that his parents be included as an integral part of his intervention program.

Example 2: Traditional Assessment Summary

Johnny is a 12-year-old boy diagnosed with autism but appears to be on the "high-functioning" end of the autism spectrum. Testing and class performance suggest that he is functioning in the average range cognitively. However, he exhibits considerable difficulty socially. During recess and lunch, he prefers to play by himself in the computer room. The school staff believes that his excessive interest in computers interferes with his ability to develop appropriate peer relationships. Even when other children or an adult points out what a good job he does on a computer project he does not acknowledge the compliment. Johnny is significantly delayed in pragmatic areas. For example, when he is with other children, he repeatedly offends them by making negative comments about their attire (e.g., "Your pants are

too short."), or their physical characteristics (e.g., "Why is your nose so big?"). Furthermore, on the rare occasions when he interacts during a group game, he is rigid and inflexible on the rules, which irritates his peers. Further complicating the problem is the fact that his parents visit the school on a daily basis, sometimes watching from the outside of the school grounds and make regular demands on the school staff to prompt him to play with the other children.

Example 2: SBA Summary

Johnny is a 12-year-old boy diagnosed with autism. Testing and class performance suggest that he is functioning well within the average range cognitively. At this point, he prefers to interact with adults or go to the computer room at lunch and recess. One of Johnny's strengths is his complete honesty. He has never been known to talk behind another child's back, but he does have a tendency to comment on personal attributes at inappropriate times. He would benefit from instruction on appropriate times for commenting. In addition, Johnny is good at memorizing rules of games. It may be helpful to use this strength during group activities by having him referee the games. Johnny also has an intense interest in computers and will seek them out during his free time. His computer projects are usually the top of his class, but he never boasts or brags about his work. It is recommended that a school club relating to computers be developed. Johnny's participation in such a club would accentuate his strengths in this area while also helping the other children. Finally, Johnny's parents are motivated to help him and have the time to assist with his intervention. It is recommended that they coordinate with the school in developing his peer relationships by setting up after school activities relating to Johnny's interests. The school can assist by providing the names of children who participate in the computer club and who engage in other activities that Johnny enjoys.

Implications for Research

There are several avenues for future research in the area of SBA for children with autism. The first area relates to how to adapt assessment measures and procedures so that they will yield useful information regarding the strengths of children with autism. Both parental report and observational procedures are likely to be useful, although specific methods require further exploration.

One of the more promising aspects of SBA is the possibility of using the information obtained through these procedures to build relationships with the parents of children with autism. Parents of children with autism experience enormous stress and often feel that professionals do not see their child as they do (Nissenbaum et al., 2002). It is possible that the information obtained

through SBA, and the act of sharing positive information about the child, will enhance the relationships between parents and professionals, allowing them to work together on all facets of the child's behavior more effectively. This area requires further examination. Finally, SBA may also affect the attitudes and perceptions of the professionals doing these assessments and interventions, thereby shaping the manner in which these clinicians interact with the child. In short, a goal of SBA is to create a "Pygmalion" effect, resulting in a different pattern of behavior between the interventionist and the child. Again, this is a topic for further research.

Conclusion

This paper explores a number of ways in which SBA could be used to enhance interventions for children with autism. Functional assessment, identification of strong interests and variables that are rewarding to the individual with autism, utilization of parental supports, and reframing child characteristics to focus on positive aspects of behavior can influence child outcomes by guiding interventions and changing parent and teacher attitudes regarding the child's possibilities.

Both positive psychology and positive behavior support acknowledge the importance of personal choice and self-control as markers of mental health. Despite interest in promoting resilience, school psychologists continue to spend the vast majority of their time on problem identification and resolution (Clonan et al., 2004), and it is likely that this is the case for others who work with children who have special needs. Future research on how strengths can be identified and used in intervention planning for children with autism is a productive avenue for the application of positive psychology and PBS. In addition, research relating to the acceptance of the diagnosis and the relationship between the diagnostician and parent when SBA is used would be interesting. Finally, the development of standardized SBA measures for children with autism and their families may be a critical link for enhancing the quality of life, self-determination, and autonomy of individuals with autism and is an important area for future research.

Thus, research in a variety of areas related to this approach suggests that some steps can now be identified that are likely to result in a highly productive systematic assessment method for children with autism. Specifically, within the assessment, some areas that could be directly included in a SBA for individuals with ASD are (1) child choice of items and activities; (2) family strengths; (3) child strengths; and (4) environmental assets. All of these areas can be directly incorporated into intervention programs. Such an assessment approach, focusing on the individual's strengths, has the potential to create optimism, reduce stress, change perceptions, and in turn improve intervention outcomes.

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