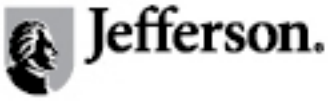

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Emerging as leaders in autism research and practice: using the data-driven intervention process.

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Emerging as Leaders in Autism Research and Practice: Using the Data-Driven Intervention Process

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It is an honor to serve as guest editors for this special issue of the *American Journal of Occupational Therapy (AJOT)* on autism. Autism is one of the most prevalent developmental disorders, affecting 1 in 110 children (Centers for Disease Control and Prevention, 2010) and having an estimated annual cost of care nearing $90 billion (Järbrink & Knapp, 2001), yet its causes are not well understood, and no scientifically recognized cure or prevention is available. Occupational therapists have been widely recognized as playing a pivotal role in the treatment of people with autism spectrum disorders (ASD) since autism was first described by Leo Kanner in 1943. This special issue spotlights occupational therapy's central position in the scientific dialogue on autism.

A review of *AJOT* articles that have addressed autism provides a perspective on the role of occupational therapy in autism. Early on, occupational therapy interventions often addressed stereotypic behaviors and facilitated independence in activities of daily living. In the 1970s, A. Jean Ayres revolutionized occupational therapy intervention practices for people with ASDs with the Theory of Sensory Integration (Ayres, 1972). She was pivotal in shifting the focus of occupational therapy intervention to include consideration of the neurobiological substrates of successful participation in life activities. This approach became one of the most used approaches by occupational therapists working with people with ASD (Miller-Kuhaneck & Watling, 2010), and it is one of the top three interventions requested by parents of children with ASD (Goin-Kochel, Mackintosh, & Myers, 2007; Green et al., 2006; Mandell, Novak, & Levy, 2005). A review of articles published in *AJOT* between 1980 and 2010 revealed that of the 22 articles that used *autism* as a key word, 13 addressed sensory processing, sensory integration, or both.

Today, occupational therapy services are a valued component of the health and educational care of people with ASD. Occupational therapy brings expertise in the facilitation of successful participation in daily life across the lifespan. Occupational therapists' ability to analyze activities and craft individually tailored interventions based on person and environmental factors is unparalleled. We must continue to clearly articulate this unique expertise, use it systematically, and evaluate its impact on participation and quality of life of people with ASD and their families.

Data-Driven Intervention

To accomplish this aim, we propose the data-driven intervention process (Schaaf, 2011) to systematically guide practitioners' reasoning, creating a seamless link from assessment to hypothesis generation[1] to intervention strategies that can be methodically tested with defined outcome measures. This work builds on Blanche's (2001, 2006) work on assessment and hypothesis generation in sensory integration

[1]The concepts of hypothesis generation and testing are adapted from functional behavioral analysis (Sugai, Lewis-Palmer, & Hagan-Burke, 2000), Blanche's (2001 and 2006) work on sensory integration, McEwen (2009), and personal conversation with T. Benevides (2010).

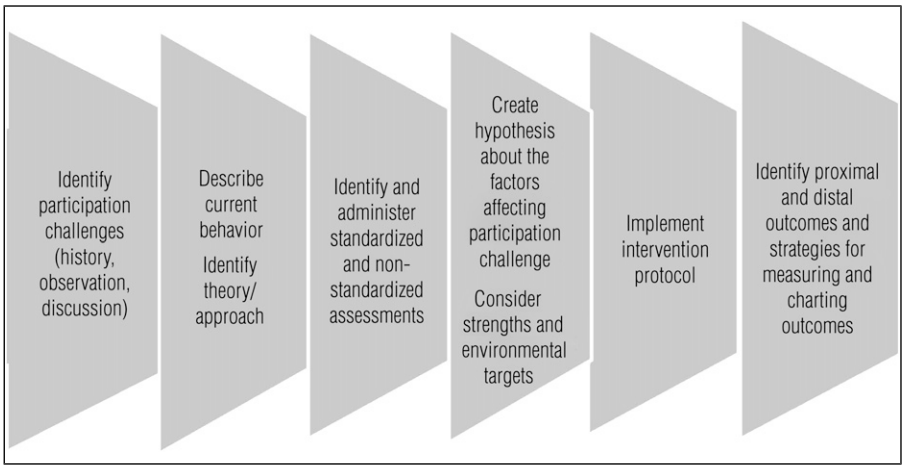

Figure 1. Data-driven intervention process (Schaaf, 2011).

Note. The data-driven intervention process uses systematic, evidence-based assessment; theory-driven hypothesis generation; identification of intervention strategies; and identification of proximal and distal outcome measures. Outcomes can then be measured through display and analysis.

to include a broader application with a focus on systematic identification and measurement of outcomes.

As displayed in Figure 1, the data-driven intervention process uses a series of steps designed to organize and guide the therapist's reasoning. Identification and measurement of outcomes that are both *proximal* (i.e., specific factors or mechanisms identified as affecting participation) and *distal* (i.e., participation behaviors one expects to change in response to the intervention) are key to this process. Identification of proximal factors as well as participation-based outcomes not only provides the structure needed to link the hypothesized factors affecting goal achievement with participation outcomes but also provides the clinician or researcher with a clear rationale for the intervention used. Review, display, and analysis of outcome data provide insight into the efficacy of the chosen intervention strategy.

Using this process, the identified hypothesis can be tested and confirmed or revised on the basis of solid data. Thus, the data-driven intervention process allows therapists to systematically identify and test their reasoning process by providing data about the effects of the intervention. Ultimately, this process allows therapists to validate occupational therapy interventions.

In This Issue

Given the significant impact of occupational therapy in autism practice and research (Schaaf & Blanche, 2011), occupational therapists must continue to articulate the unique skills that occupational therapy offers; validate these skills through systematic data collection, display, and analysis; and publish their findings in peer-reviewed, interdisciplinary venues. This issue of *AJOT* provides that opportunity. We are fortunate to include work from many of the leaders in the field of occupational therapy.

The articles presented in this issue fall broadly into three categories: clinical classifications and subtyping, instrument development, and intervention efficacy. The clinical classification and subtyping articles focus on clustering patterns of behaviors that can be used to guide research and practice by tailoring interventions to address specific symptoms or subgroups. The instrument development articles address instrumentation, providing data on instruments that are psychometrically sound, feasible to administer, and meaningful for occupational therapy. These instruments are essential to the data-driven process.

Articles focusing on intervention efficacy provide evidence for a broad spectrum of occupational therapy interventions, ranging from parent coaching to direct interventions. These articles provide occupational therapists with pivotal data to support the use of evidence-based interventions in a data-driven framework. Finally, "The Issue Is" (Burke & Gitlin, 2012) highlights the value of evidence-based practice and presents theoretical issues to confront when integrating evidence into practice.

We hope that you enjoy this new knowledge and use it to shape your practice with data-driven interventions that allow occupational therapy to continue to hold a central role in the ongoing scientific dialogue on autism. ▲

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References

Ayres, A. J. (1972). *Sensory integration and learning disorders.* Los Angeles: Western Psychological Services.

Blanche, E. I. (2001). *Clinical observations for sensory integration.* Torrance, CA: Pediatric Therapy Network.

Blanche, E. I. (2006). Clinical reasoning in action: Designing intervention. In R. C. Schaaf & S. Smith Roley (Eds.), *Sensory integration: Applying clinical reasoning to practice with diverse populations* (pp. 91–106). Austin, TX: Pro-Ed.

Burke, J. P., & Gitlin, L. N. (2012). The Issue Is—How do we change practice when we have the evidence? *American Journal of Occupational Therapy, 66,* e85–e88. http://dx.doi.org/10.5014/ajot.2012.004432

Centers for Disease Control and Prevention. (2010). *How many children have autism?* Retrieved from www.cdc.gov/ncbddd/features/counting-autism.html

Goin-Kochel, R. P., Mackintosh, V. H., & Myers, B. J. (2007). Parental reports on the efficacy of treatments and therapies for their children with autism spectrum disorders. *Research in Autism Spectrum Disorders, 3,* 528–537. http://dx.doi.org/10.1016/j.rasd.2008.11.001

Green, V. A., Pituch, K. A., Itchon, J., Choi, A., O'Reilly, M., & Sigafoos, J. (2006). Internet survey of treatments used by parents of children with autism. *Research in Developmental Disabilities, 27,* 70–84. http://dx.doi.org/10.1016/j.ridd.2004.12.002

Järbrink, K., & Knapp, M. (2001). The economic impact of autism in Britain. *Autism, 5,* 7–22. http://dx.doi.org/10.1177/1362361301005001002

Kanner, L. (1943). Autistic disturbances of affective contact. *Nervous Child, 2,* 217–250.

Mandell, D. S., Novak, M. M., & Levy, S. (2005, May 6). *Frequency and correlates of treatment use among a community sample of children with autism.* Presentation at the International Meeting of Autism Research, Boston.

McEwen, I. (2009). *Writing case reports: A how-to manual for clinicians.* Alexandria, VA: American Physical Therapy Association.

Miller-Kuhaneck, H., & Watling, R. (2010). *Autism: A comprehensive occupational therapy approach* (3rd ed.). Bethesda, MD: AOTA Press.

Schaaf, R. C. (2011, December). *Emerging as leaders in autism research and practice.* Paper presented at the American Occupational Therapy Association Autism West Specialty Conference, Long Beach, CA.

Schaaf, R., & Blanche, E. I. (2011). Comparison of behavioral intervention and sensory integration therapy in the treatment of challenging behavior [Letter to the editor]. *Journal of Autism and Developmental Disorders, 41,* 1436–1438. http://dx.doi.org/10.1007/s10803-011-1303-0

Sugai, G., Lewis-Palmer, T., & Hagan-Burke, S. (2000). Overview of the functional behavioral assessment process. *Exceptionality, 8,* 149–160. http://dx.doi.org/10.1207/S15327035EX0803_2