Issue Editor Foreword

A Developmental Framework for Evidence-Based Practices for the Autism Spectrum

When designing programming for individuals on the autism spectrum, evidence-based practices (EBPs) might be associated with an overly simplistic definition of practices that produce reproducible results in highly controlled empirical studies. Although such studies contribute important information to EBP, this simplistic definition is far from adequate. The results of these empirical studies may or may not be consistent with (1) stakeholder selected outcomes (i.e., the desired outcomes and preferences of individuals with autism, their caregivers, and their educators); (2) ecological validity (i.e., the requirements of the settings where those individuals are being supported, such as the home, school, community, and vocational settings); and (3) the developmental level of the individual as determined by a person-centered assessment. In school settings, for example, Part C of IDEA requires an individualized determination of a student's level of functioning before any determination of "appropriate" practices and supports can be made. All too often, however, determination of the so-called "evidence-based practices" in educational programming is simply suggested on the basis of a diagnostic label and assumptions about functioning that have no basis in ecologically valid observation.

Consider, instead, the definition adopted by the American Speech-Language-Hearing Association (ASHA, 2005), which states that "*evidence-based practice* refers to an approach in which current, high-quality research evidence is integrated with practitioner expertise and client preferences and values into the process of making clinical decisions" (retrieved from http://www.asha.org/policy/PS2005-00221.htm). This definition mirrors that which was proposed by the National Autism Center (NAC) in its *Evidence-Based Practice and Autism in Schools Guide* (NAC, 2011). In its guide, the NAC indicated that, although research findings are essential, they are not the only component of EBP. Evidence-based practice requires the integration of research findings with other critical factors, including the values and preferences of families and of the individual with autism, the capacity to accurately implement interventions, given the requirements of specific settings, and professional judgments based on clinical and educational data.

In planning this issue of *Topics in Language Disorders*, our goal was to inform and empower providers and consumers of EBPs in the area of autism regarding the key factors of (1) stakeholder selected outcomes, (2) ecological validity, and (3) use of a developmental framework to identify key outcomes. Provision of programming for individuals with autism relies on a careful selection of focused approaches that are directed at the acquisition of specific skills or the reduction of behaviors that are interfering with learning and social engagement. Prior systematic reviews have established nearly three-dozen approaches that are considered effective at promoting positive outcomes (Wong et al., 2013). These practices, however, target a wide range of behaviors, some of which may or may not be relevant or of utmost priority, given the developmental needs of an individual, the requirements of a setting, and/or the preferences of those being supported.

In this issue, our contributing authors emphasize the importance of considering EBPs within a comprehensive framework that is sensitive to the developmental language level of the individual (i.e., presymbolic, emerging language, or conversational) and his or her overall social reciprocity. Furthermore, several articles show how outcomes associated with the EBPs,

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although they may appear unconventional, have value with respect to the unique requirements of a setting, and, importantly, the preferences and values of the stakeholders.

A DEVELOPMENTAL FRAMEWORK

A primary diagnostic characterization of the autism spectrum is a qualitative impairment in social communication (*Diagnostic and Statistical Manual of Mental Disorders*, Fifth Edition; American Psychiatric Association, 2013). Thus, this area of development should be a critical consideration in targeting outcomes for individuals on the autism spectrum across the life span. If our collective impact is focused on supporting an individual's overall social communication development and long-term positive outcomes, consideration of the most critical outcomes for each developmental stage can help us select the most relevant EBPs. An individualized assessment, such as the *SCERTS Assessment Process* (Prizant, Wetherby, Rubin, Laurent, & Rydell, 2006), can facilitate the identification of developmentally sensible skills that are most *predictive* of developmental growth and shifts toward social and emotional competence (Wetherby et al., 2014). Becoming a better consumer of all forms of EBP input for individuals with autism will require recognition of this developmental framework.

Before words

For those individuals with autism who are presymbolic and are, therefore, not yet using spoken words, pictures, sign language, or other forms of assistive technology, the ability to establish shared or joint attention and to engage in spontaneous nonverbal communicative acts serve as the strongest predictors of the acquisition of language and verbal development (Shumway & Wetherby, 2009). Neurological differences contribute to preferential attention for nonsocial stimuli, such as objects and toys, along with less orientation to social engagement (Klin, Lin, Gorrindo, Ramsay, & Jones, 2009). Therefore, when selecting EBPs for individuals at this developmental stage, one must assess not only whether the strategy is producing "results" but also whether those results are centrally focused on increasing an individual's attention toward others and the frequency of self-initiated, nonverbal forms of communication. Addressing these core social communication skills provides the early underpinnings of later social competence.

Rollins' (2016) contribution to this issue emphasizes that, indeed, "words are not enough." Rather, the author discusses how approaches might produce more significant gains in a child's social communicative competence if they were to focus on the developmental precursors of reciprocal emotion sharing, establishing anticipatory social routines, and fostering spontaneous nonverbal functions of communication, including both requesting and protesting, as well as respondent and initiated forms of joint attention. The approach also emphasizes the importance of the setting where the individual is being supported and the role and perspective of the key stakeholders such as parents and teachers. By developing strategies for partners to respond contingently to signals of emotion, attention, and intention, the result is likely to be greater attunement, anticipation, and a foundation for shared intention.

Greathead et al. (2016) have further contributed to this discussion, as they have emphasized the critical importance of developmentally sensitive observational tools and methods. By measuring efforts to foster social reciprocity and shared intent within a range of settings, service providers are more likely to ensure that individuals with minimal symbolic language have played a meaningful role in the decisions that shape their lives. To judge whether an approach is evidence-based and producing "desired" results without the input of the individual affected is ethically questionable. Therefore, the value of these tools for ensuring the most careful selection of approaches is immeasurable.

Emerging language

For individuals who have developed early joint attention and a frequency of initiation to sustain the development of symbolic language, the use of a range of relational word combinations, including people's names and verbs, is predictive of creative language acquisition. For individuals with autism, a preference for nonsocial stimuli often results in vocabulary development that remains limited to nouns or object labels. Symbolic word forms for referents other than nouns (e.g., people's names,

action words, modifiers, and relational words) are often later developing in children with autism spectrum disorder and limit creative language acquisition (Williams, 2008). Thus, the use of a wide range of vocabulary, including social vocabulary such as a range of people's names and relational words such as actions and locations, should take prominence over a sole focus on acquisition of nouns and rote language forms. With only an expanding repertoire of nouns and attributes, an individual will not have the foundational skills to progress into the generative linguistic stages needed for conversational language. This is a worthy clarification, as there are strategies that might produce "results" associated with an expanded lexicon or vocabulary but not creative and generative language. In addition, the predictive value of more social functions of communication and greater social reciprocity across adults and peers is evident when compared with outcomes where the individual is using words but primarily for instrumental purposes (i.e., to request or protest).

In the contribution of Rice, Adamson, Winner, and McGee (2016), there is recognition that addressing an individual's symbolic capacity will need to be accompanied with efforts to increase an individual's coordinated state of joint attention, by increasing social interest and the ability to attend to multiple factors (e.g., people, objects, symbols) simultaneously. These communicative skills reach beyond rote naming, requesting, or following an adult's lead, and place an emphasis on empowering the child to increase rates of communication for the function of shared attention in truly meaningful and reciprocal routines and activities that are predictable and purposeful. The importance of social setting is also emphasized, as one might produce results in a controlled laboratory or one-on-one setting with a child and an adult, but for true learning to occur in a pivotal manner, the individual will need to be able to practice and learn from a range of communicative partners, both adults and peers, and in a range of natural and inclusive settings.

Conversational language

For individuals who are using creative and generative language to communicate (either through verbal or augmented means), the most predictive developmental priorities relate to social conventions or pragmatic language. Although social motivation may be increased by this developmental stage, learning differences in how social emotional information is processed neurologically and how social meaning is derived impact an individual's competence and sense of self-efficacy as a communicator. Thus, approaches that result in outcomes where individuals have increased their awareness of the social rules of conversation (e.g., how much/little to say, appropriate body proximity, vocal volume, and speaking style) and the ability to take on another's perspective in conversation will be of utmost importance. Outcomes studies also have provided evidence of the predictive value of social emotional competence to overall well-being and emotional health, as the lack of social competence as a risk factor associated with mental health difficulties into adolescence and adulthood (Tsatsanis, Foley, & Donehower, 2004).

When navigating the best fit of assessment and intervention strategies for individuals with autism at this stage, a focus on overall well-being and sense of competence in a setting is critical. Asaro-Saddler (2016) provides a review of the research basis for an approach that is sensitive to the setting where self-confidence and well-being are critical for young individuals with autism, that is, the classroom setting. The self-regulated strategy development approach has shown reproducible results of improving the quality and efficiency of the writing process, has ecological validity to the instructional demands of a school setting, and has been socially validated by the students themselves.

Finally, the contribution of Crooke, Winner, and Olswang (2016) further emphasizes the importance of selecting outcomes that are most predictive of the developmental priorities of the conversational stage. In their article, this focus is on social cognition as the foundation for learning conventional social behaviors. They discuss the impact of the social setting and the need for stakeholders' participation in the selection of targeted outcomes. The authors emphasize that these are integral factors for ensuring an individual's opportunity to benefit from a strategy that matches his or her needs, the settings, and the individual's values and preferences. These variables are at the core of both decision making and implementation of EBPs.

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