



Intensive Collaborative Intervention Programs for Children With Developmental Disabilities

SIP

Maria del Pilar Saa, OTD, OTR/L; Summer Squillacioti, OTD, OTR/L; and Sheryl J. Rosin, PhD, CCC-SLP

Dosing is an important topic of discussion within the occupational therapy community when determining a client's course of treatment. To determine the optimal frequency, intensity, and duration of an intervention, it is essential for occupational therapists (OTs) to use clinical, interactive, pragmatic, conditional, scientific, narrative, and ethical reasoning (Caracci et al., 2018). An increasing trend in outpatient facilities within the U.S. is the implementation of intensive interventions with the purpose of maximizing intervention results. The duration and frequency of these intensive programs vary depending on the facility and may include interprofessional services such as speech-language pathology and occupational therapy.

This article describes an intensive collaborative intervention program (ICIP) for children with developmental disabilities using occupational therapy with a sensory integration approach (OT-SI) and speech-language pathology applying the PLAY Project (Solomon et al., 2014) principles and methods (SLP-PLAY). The PLAY Project is based on Greenspan and Wieder's (1997) theoretical framework—a relationship-based developmental approach, focusing on the child's individual differences and social reciprocity. According to this framework, when dyadic interaction is contingent, reciprocal, and enjoyable, a child will progress through a series of functional developmental levels (FDLs), thereby improving skills and participation. Using the PLAY Project with children with autism has produced improvements in interaction skills, language development, and autism symptomatology (Solomon et al., 2014).

ICIP Program

Using SLP-PLAY and OT-SI in traditional settings has yielded significant improvements in motor and sensory functioning (Watling & Hauer, 2015) as well as social engagement and child-parent interactions (Solomon et al., 2014). Traditionally, OT-SI and SLP-PLAY are provided 1 to 2 times a week for up to 2 years (Gee et al., 2016; Tilmont Pittala et al., 2018). In contrast, this intensive model delivers 15 hours a week of combined SLP-PLAY and OT-SI for approximately 6 weeks. The ICIP was developed in 2017 to provide services to international families who have limited access to occupational therapy or speech-language pathology in their home countries but are able to visit the U.S. for short periods of time for therapy (e.g., 2 to 6 weeks). Rates for these families are discounted, and a nonprofit group was created to assist families who need and cannot fund services (created by Dr. Sheryl Rosin). Most families come from under-resourced and underserved areas in the Caribbean or parts of Central and South America.

Previous studies have reported OT-SI dosage effectiveness at 18 to 30 sessions to achieve individualized goals (Pfeiffer et al., 2011; Schaaf et al., 2014), and 3 hours per month of direct PLAY Project

intervention plus 2 hours a day of caregiver-child PLAY interaction for 1 year (Solomon et al., 2014). The ICIP was developed with the purpose of achieving goals in a short period of time, hypothesizing that intensive treatments would accelerate improvements in skill acquisition, promoting participation in all environments (e.g., home, school, community). However, only one case study of such intensive treatment exists; this case examined intensive OT-SI and reported improvements in Goal Attainment Scale (GAS) goals and motor coordination (Andelin et al., 2019).

Using OT-SI dosage information and personal experience implementing intensive SLP-PLAY (S. J. Rosin, personal communication, December 19, 2019), the ICIP was designed to provide therapy for 3 hours a day (1 hour of OT-SI and 2 hours of SLP-PLAY), 5 days a week, for 3 to 6 weeks. In a family-centered approach, OTs, speech-language pathologists (SLPs), and family members collaborate closely to support improved client performance and address major factors that support and hinder participation. Parental education, a core principle of SLP-PLAY (Solomon et al., 2014) and an integral part of family-centered practice (Dunn, 2011) occurs throughout the course of the ICIP. The ultimate goal of the program is to train parents to use SLP-PLAY and sensory-based techniques, strategies, and principles so intervention techniques can continue in their home countries, with periodic collaboration with the therapists, improving the skills and quality of life of the child and family (Fingerhut et al., 2013). Continued collaboration with the family after the ICIP occurs through phone and/or videoconferencing to ensure maintenance and continued improvement of the child's newly acquired skills.

Evaluation and Outcome Measurement

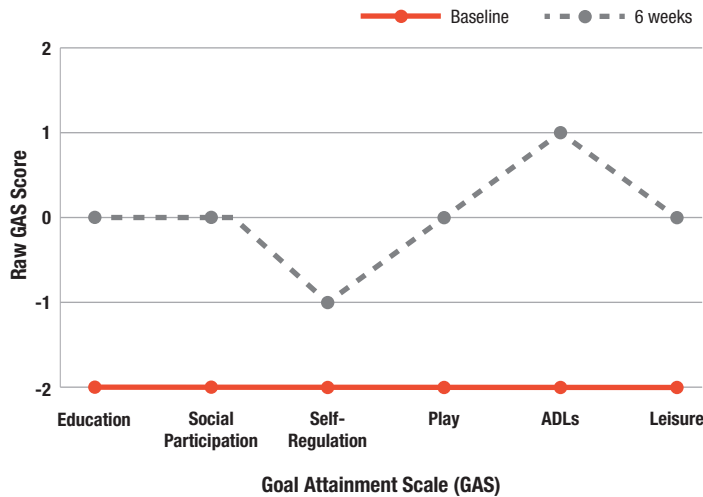
The OT conducts an evaluation to develop the child's occupational profile and identify the areas that support and/or hinder the child's occupational performance. The SLP determines the child's FDLs and their speech and language profile. Together, the team (OT, SLP, family members) establish dosage, individualized goals, and plan of care. Although the ICIP was designed to provide therapy for 3 hours a day, 5 days a week, for 3 to 6 weeks, dosing is decided based on evaluating four client/family factors, adapted from the intervention frequency guidelines for the pediatric medical setting (Bailes et al., 2008). These factors are: (1) the client/family's potential to benefit from the therapy process; (2) the client/family's potential to participate in the therapy process; (3) the stage of critical period for skill

About the Sensory Integration & Processing SIS

The Sensory Integration & Processing Special Interest Section (SIPSIS) focuses on the research and development of sensory integration theory, assessment, and intervention as applied in occupational therapy practice. Sensory integration is used to enrich the occupational performance and participation of individuals with a variety of disabilities across the lifespan by focusing on the neurobiological, sensory, and praxis foundations of occupation.

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Figure 1. Kwame's Raw Goal Attainment Scale Scores at Baseline and After 6 Weeks of the Intensive Collaborative Intervention Program



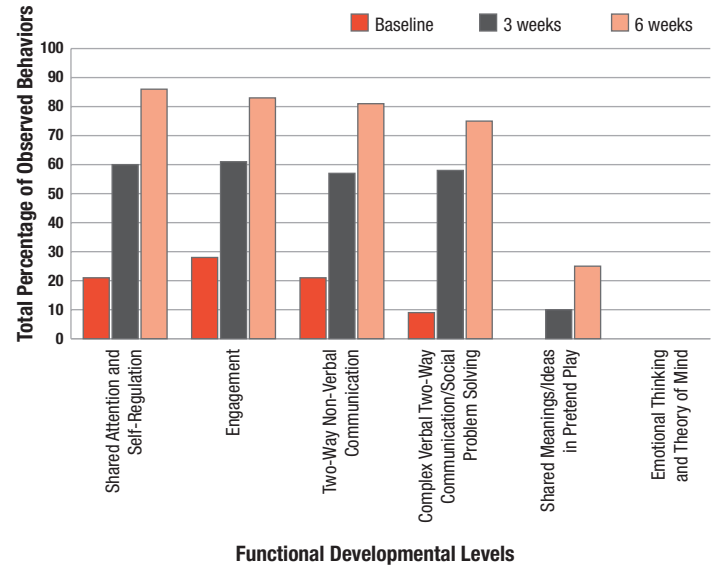
acquisition; and (4) the amount of clinical reasoning and problem solving required to attain the proposed goals and participate in daily life. Based on categorization for each factor, dosages considered are: (1) intensive (3–5 times/week); (2) continuous (1–2 times/week); (3) periodic (biweekly/monthly); or consultative (every 3 months or as needed). See the table on CommunOT for details.

To track progress, the ICIP uses outcome measures such as the GAS goals, FDLs, and discrete behavior measures when standardized evaluations are not available or the child is not able to comply with the standardized process. The GAS is an individualized outcome measure in which clients and therapists collaborate in goal selection and scaling to quantify progress towards achievement (Turner-Stokes et al., 2009). FDLs identify how a child integrates their abilities (e.g., emotional, language, sensory processing, motor skills) to relate to the social and cognitive world in a purposeful and emotionally meaningful manner, with scores in six domains (shared attention and self-regulation; engagement; two-way nonverbal communication; complex verbal two-way communication [social problem solving]; shared meanings/ideas in pretend play; emotional thinking and Theory of Mind; Greenspan & Wieder, 1997). Discrete behaviors are tracked during free play and while play situations are presented during evaluation.

Case Example

Kwame was a sweet and fun 4-year-old boy who lived in St. Kitts with his mother and father. Kwame displayed difficulties with communication, social participation, and emotional regulation (tantrum-like behaviors). Kwame was diagnosed with autism spectrum disorder 6 months before his visit to the U.S. St. Kitts does not currently have occupational therapy or speech-language pathology in the country, but Kwame's parents received outreach services from the U.S. (through the Caribbean Autism Project, created by Dr. Sheryl Rosin) and learned of the benefits of intervention. This led to their decision to travel to the U.S. to access services, which were provided at a discount. After the initial OT and SLP in-person evaluations and parent consultations, the therapists determined that Kwame should receive services in the ICIP program for 6 weeks, 5 days a week, 3 hrs a day (60 hrs of SLP-Play and 30 hrs of OT-SI) because of his potential for rapid progress and goal achievement, his fam-

Figure 2. Kwame's Functional Developmental Level Scores at Baseline, 3 Weeks, 6 Weeks of the Intensive Collaborative Intervention Program



ily's potential to support intervention despite the inaccessibility of services, his age—suggesting a critical period for skill acquisition, and his need for a high level of support to attain goals and participate in daily life. No standardized occupational therapy assessments were used during evaluation because of Kwame's difficulty with participating in structured testing. Six GAS goals were developed for occupational therapy in the areas of social participation, education, self-regulation, play, ADLs, and leisure. Speech-language pathology FDL goals included shared attention and self-regulation, engagement, two-way nonverbal and verbal communication, social problem solving, and mood regulation.

The parent program included training on the PLAY Project principles and methods, and sensory-based activities. Kwame's parents were taught how to attain and maintain his optimal level of arousal while engaging in reciprocal interactions (e.g., nonverbal gestures, circles of communication, shared social attention, social interest) in both OT-SI and SLP-PLAY sessions, according to both sensory integration theory and PLAY Project theory. The parents completed a quiz to assess their understanding of these concepts and were instructed to log their time PLAYing with Kwame. Videos of parent interactions were reviewed by the lead OT and SLP weekly, with immediate feedback and further guidance provided to the parents. After completing the ICIP, Kwame's parents were asked to provide a new video to be reviewed every 3 months or when they needed feedback to revise the plan as his needs changed.

At the completion of the 6-week ICIP, Kwame exhibited improvement in all of his GAS goals for OT-SI (see Figure 1). Overall, his change in scores showed an expected level of achievement in all goals, except self-regulation, which demonstrated progress toward the outcome goal. For his SLP-PLAY FDL goals, Kwame demonstrated the most improvement in self-regulation and shared attention; engagement; and two-way nonverbal and verbal communication (see Figure 2). These levels build upon each other, and the acquisition of lower levels is critical for the development and progress of higher levels; therefore, the minimal change in shared meanings/ideas in pretend play, and emotional thinking and Theory of Mind, was expected throughout the ICIP.

Overall, Kwame made improvements in all pre-identified areas of difficulty, and his parents were very pleased with his progress and their caregiver training throughout the program. His parents will receive follow-up surveys for 1 year to evaluate skill maintenance and long-term effect of the ICIP to improve participation, identify new challenges, and determine the need for further therapeutic support (e.g., modify home program).

Conclusions

Although more research into the effectiveness of the ICIP is needed, our team is optimistic that further research will support the efficacy of intensive collaborative models, leading to greater use of intensive treatment models, which will improve access for children in need. It is hoped that this initiative will empower other professionals to create ICIPs to provide services, caregiver education, and follow-up care to underserved populations. These intensive models allow caregivers, through coaching, to become bridges for education in their own countries, advocate for their child's needs, and hopefully inspire individuals to pursue careers in the fields of speech-language pathology and occupational therapy and bring our professions to their home countries or communities. Finally, there is great potential for programs such as ICIP to contribute to the literature regarding dosing effectiveness for OT-SI and SLP-PLAY interventions in the care of children with developmental disabilities.

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- Maria del Pilar Saa**, OTD, OTR/L, works at InterPlay in Palm Beach, Florida. She can be reached at pilar@interplaytherapy.com.

Summer Squillacioti, OTD, OTR/L, works at InterPlay.

Sheryl Rosin, PhD, CCC-SLP, works in Palm Beach Gardens, Florida, at Palm Beach Speech-Language Specialists and is adjunct faculty at four universities.

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