

Occupational Therapy Interventions for Children and Youth Ages 5 to 21 Years

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Evidence Connection articles provide a clinical application of practice guidelines developed in conjunction with the American Occupational Therapy Association's (AOTA's) Evidence-Based Practice Program. Each article in the series summarizes the evidence from the published reviews on a given topic and presents an application of the evidence to a related clinical case. The articles illustrate how the research evidence from the practice guidelines can be used to inform and guide clinical decision making. In this Evidence Connection article, we describe a case report of a child receiving occupational therapy services and summarize the evaluation and intervention processes for supporting sleep, activities of daily living, and social participation. The practice guideline on this topic was published in the July/August 2020 issue of the *American Journal of Occupational Therapy* (Cahill & Beisbier, 2020).

Occupational therapy practitioners work with children and families to identify meaningful goals for performance and participation and to make decisions about the types of intervention that will be used as well as the context in which services will be provided. In using child- and family-centered care principles, occupational therapy practitioners incorporate the priorities and perspectives of both the child and the family. Occupational therapy practitioners provide habilitative services that promote skill acquisition and participation in meaningful daily life activities.

Self-Care Routines

Children often receive occupational therapy services to address issues with participation and performance in activities of daily living (ADLs) typical for their age group. Successful completion of self-care routines helps them to build confidence and autonomy. Significant positive outcomes are associated with the use of functional tasks to improve children's performance of self-care routines (Laverdure & Beisbier, 2021). Explicit skills training in ADLs and structured practice, including tasks with graded difficulty provided in natural contexts, is effective in supporting development and engagement in self-care skills. Caregiver and family involvement is critical to providing occupational therapy services to children, and increased family involvement allows occupational therapy practitioners to model strategies to encourage the child's participation and leads to skill mastery. Caregiver coaching and feedback are particularly effective in promoting children's independence with ADL tasks and reducing the need for caregiver assistance (Laverdure & Beisbier, 2021).

Play and Social Participation

Play is an important occupation of children. Statistically significant positive outcomes are associated with the use of play-based interventions to increase the skills associated with children's social participation (Cahill & Beisbier, 2020). Play-based activities that involve peers and support the child's use of intrinsic motivation are effective for increasing playfulness. Coaching, peer modeling, and instruction on how and when to use specific skills (e.g., showing empathy) are effective in increasing collaborative play and play engagement (Laverdure & Beisbier, 2021). Caregiver and family

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involvement is also critical to the development of play and the skills associated with sustained social participation (Cahill & Beisbier, 2020).

Sleep

Sleep is a factor in overall health, and it can affect the daily functioning of children and their caregivers. Consideration of sleep quality and sleep routines should be part of each child's occupational profile. The use of rigorous exercise as an intervention should include guided practice for the child and caregiver and follow-up to assess effectiveness and considerations for modification to the exercise and activity plan (Cahill & Beisbier, 2020). Interventions that include coaching of caregivers and focus on building sleep routines and healthy sleep habits can have a significant impact on overall quality of sleep and daily functioning for both the child and members of the household (Cahill & Beisbier, 2020).

Clinical Case

Jacob is a 9-yr-old boy who is in third grade and attends a public elementary school, where he has an Individualized Education Program and receives special education instruction for math as well as school-based occupational therapy and speech-language pathology services. Jacob lives with his father, his younger sister, and his paternal grandmother in a three-bedroom home. Jacob's father works full time and commutes approximately an hour to and from work. Jacob's grandmother helps Jacob get ready for school in the morning and greets him when the bus drops him off at home at the end of the day.

Jacob's favorite pastime is reading comic books and graphic novels alone in his room. He also enjoys being outdoors and doing a weekly swimming activity with his father and sister. Jacob remembers to put dirty dishes in the sink after meals and clean up his toys at the end of the day. Jacob is quiet and slow to warm to strangers, including children his own age. Although Jacob likes to be at the park, he does not try to interact with other children and seems fearful when they approach to ask him to play. His grandmother has noticed that he has difficulty completing self-care tasks that other children his age perform independently, such as brushing his teeth and dressing himself. Jacob also has trouble falling asleep and sleeping through the night. Jacob was referred to occupational therapy by his pediatrician with a diagnosis of delayed milestone in childhood (Code R62.0; *International Classification of Diseases and Related Health Problems, 10th Revision*; World Health Organization, 1992) after receiving low scores on a developmental screening checklist.

Occupational Therapy Assessment and Findings

In advance of the evaluation session and on the basis of the referral, the occupational therapist provided Jacob's father with a sleep tracking document and the Children's Sleep Habits Questionnaire (Owens et al., 2000) to complete at home. On the day of the evaluation session, the occupational therapist met the family at their home. The occupational therapist began the initial evaluation by interviewing Jacob, his father, and his grandmother to develop an occupational profile (American Occupational Therapy Association [AOTA], 2021). During the interview, the occupational therapist learned about Jacob's occupational history and gained important information about Jacob's interests and values, strengths, performance patterns, and performance skills. The occupational therapist was also able to ask questions about how Jacob performed occupations in different contexts and identified contextual aspects that supported and inhibited his engagement. During the interview, Jacob and his father and grandmother identified barriers and challenges related to Jacob's initiating and performing ADLs, following and maintaining sleep routines, and sustaining peer interactions.

The occupational therapist also completed the Waisman Activities of Daily Living Scale (Maenner et al., 2013) and reviewed the sleep record with Jacob and his family. The occupational therapist walked with Jacob and his father to the local playground and used the Test of Playfulness in observing Jacob (Skard & Bundy, 2008). Table 1 summarizes the evaluation findings.

Table 1. Evaluation Findings

Assessment Tool	Results
Occupational Profile (American Occupational Therapy Association, 2021)	<p><i>Supports engagement:</i> exploring environments, expressing emotions, showing preferences, making choices, and following transitions with adult support</p> <p><i>Inhibits engagement:</i> difficulty initiating and performing activities of daily living, following and maintaining sleep routines, sustaining peer interactions</p> <p><i>Client's priorities:</i> Jacob's priorities are to feel more comfortable playing with other children and to dress without his grandmother's assistance.</p>
Children's Sleep Habits Questionnaire (Owens et al., 2000)	<p><i>Strengths:</i> unafraid of the dark, unafraid of sleeping alone, no presence of parasomnias (e.g., grinding teeth, sleep walking, or night terrors)</p> <p><i>Barriers to occupational performance and participation:</i> amount of time to fall asleep, amount of sleep per night, restless sleep, and tired upon awakening</p>
Sleep record completed by father for 7 consecutive days	<p><i>Results:</i> >90 min time to sleep 5 of 7 days. 60–75 min time to sleep 2 of 7 days. Sleep duration 4–5 consecutive hours of sleep 7 of 7 days.</p>
Waisman Activities of Daily Living Scale (Maenner et al., 2013)	<p><i>Strengths:</i> independent with toileting, eating, drinking, bathing, putting away toys, preparing a cold snack, and clearing table after dinner</p> <p><i>Barriers to occupational performance and participation:</i> inconsistent and below-age expectations for performance with brushing teeth and hair, dressing, and nose blowing because of limited motor and process skills</p>
Test of Playfulness (Skard & Bundy, 2008)	<p><i>Strengths:</i> appears to feel safe during play and is beginning to incorporate people into play. Two incidences of peer social engagement (responded to peer's question) after parent prompt; one incident of cooperative play on playground equipment with parent directive and ongoing support</p> <p><i>Barriers to occupational performance and participation:</i> limited communication and interaction skills for cooperative play, responding to other's facial or body cues, and engaging in challenges. Does not independently initiate peer play in 30 min in familiar setting with familiar peers; 2 additional attempts for cooperative play on playground with parent directive failed. Demonstrates onlooker play behaviors. Does not try to overcome obstacles or barriers to play.</p>

Goal Setting and Priorities for Intervention

Jacob and his family reviewed the evaluation findings with the occupational therapist and identified priorities for intervention. The occupational therapist learned that Jacob's sleep routine (or sleep pattern) has a significant impact on the family. Jacob and his family identified getting to sleep and getting enough hours of consecutive sleep as the main barriers to his occupational performance and daily routine. Jacob expressed pride in being able to prepare a cold snack and help with dishes after dinner. However, he expressed a desire to brush his teeth and hair and get dressed independently. Jacob's grandmother would also like him to be able to blow his nose without support. Jacob and his family recognized his relative strength in social interaction with family members and expressed a desire to increase Jacob's opportunities to play with peers and initiate social interactions.

Occupational Therapy Intervention

The occupational therapist used a combination of practice experience, information from current literature, and the unique client context to collaborate with Jacob and his family to develop an intervention plan that was informed by evidence and would maximize Jacob's strengths and leverage his current support systems. The occupational therapist used the *Occupational Therapy Practice Guidelines for Children and Youth Ages 5–21 Years* (Cahill & Beisbier, 2020) as a tool to guide decision making and considered Jacob's presentation in relation to the diagnoses addressed in the practice guidelines. The occupational therapist then reviewed the practice guidelines, paying special attention to the information in the clinical recommendations table and the implications specific to outcomes that were aligned with Jacob's priorities.

The occupational therapist found

- strong strength of evidence for the use of functional tasks and cognitive-based interventions to improve performance and engagement in self-care activities and routines;
- strong strength of evidence for the use of play-based interventions to improve social participation; and
- moderate strength of evidence for education, coaching, and cognitive strategies to improve sleep.

Evidence from the practice guideline, Jacob's interests, and the family's preferences informed the occupational therapy intervention plan. Sessions were conducted in the natural environment (i.e., home, playground, and community swimming pool) and included training, coaching, and consultation during the occupations of play, self-care, and social participation. Sleep was addressed through a coaching and consultation model. Family-centered, community-based sessions occurred 2 times per week over 8 wk.

Intervention 1: Self-Care

The occupational therapist collaborated with Jacob and his family to address grooming and dressing and establish a plan that included graded introduction of more complex tasks and shaping, thought restructuring, and parent involvement (Drahota et al., 2011). For example, during dressing, the occupational therapist first introduced a short-sleeved pullover t-shirt. Once Jacob demonstrated independent performance with the short-sleeved t-shirt, a long-sleeved t-shirt was introduced and then, finally, a button-down shirt. The occupational therapist challenged Jacob's negative statements (e.g., "My grandma won't ever help me again") and supported positive thought restructuring (e.g., "My grandma will still help me if I need it, but I can try to do this on my own"). Jacob's grandmother was coached to support his attempts at mastery and to provide feedback and praise. *Shaping*, or providing positive reinforcement when Jacob's performance approximated the desired performance, was used to encourage him to complete tasks independently and in accordance with established social norms (i.e., using own toothbrush rather than a family member's and blowing his nose with a tissue instead of a hand towel). The occupational therapist used the shaping technique when praising Jacob as he made attempts at mastery or completed a small component of a task, such as putting his arm through a sleeve, even when he was unsuccessful at fully donning the shirt.

Intervention 2: Social Participation

The occupational therapist formed an after-school play group for same-age peers with the purpose of providing opportunities for all the children to develop relationships, practice social communication skills, and expand play repertoires (Wolfberg et al., 2015). The group included five children with varying levels of communication and interaction skills and used a consistent routine, which included a greeting activity, peer-mediated play choices, and a closing activity. Visual supports, such as activity choice boards, were provided, and all participants were encouraged to engage in spontaneous and flexible play with others.

The occupational therapist facilitated Jacob's play initiations by encouraging him to speak to children who appeared to capture his interest and helped peers interpret the ways in which Jacob expressed interests and enjoyment, such as squeezing his hands together while jumping up and down. The occupational therapist challenged all the play group participants to extend their play by systematically adjusting the amount of adult support needed and encouraged them to gain one another's attention and engagement in reciprocal play during games such as catch. The therapist provided parent-friendly information that outlined the importance of peer interaction for developing skills associated with meaningful social participation. The therapist actively coached Jacob's father as they used problem-solving strategies to identify appropriate games and activities to maximize interaction with peers and assisted them in determining the appropriate level and timing of support to provide Jacob (Kretzman et al., 2015).

Intervention 3: Daily Routines Promoting Sleep

After each 30-min playground session, the family (Jacob, Jacob's father, and his sister) and the occupational therapist went to the nearby community swimming pool. Swimming is part of the family's weekly routine. The therapist coached the family through a 45- to 60-min aquatic activity sequence (Oriol et al., 2016). The aquatic sequence included warm-up movements, such as arm circles and marching, and a cardio segment with options such as jogging and performing jumping jacks in the pool. The warm-up activities were followed by a series of pool games that involved the family members and willing peers. The games included tag and other imaginative and action-oriented games (e.g., "hot and cold" and "sharks and minnows"). The last two elements of the aquatic sequence included time for unstructured play or swimming and a cool-down activity.

The occupational therapist provided Jacob and his family with encouragement to remain active and brainstormed other activities that could be done in the pool. Each night, Jacob's father logged Jacob's sleep behaviors to share with the occupational therapist. Jacob's family and the occupational therapist discussed the difference in Jacob's sleep patterns and noted improvements when he had the opportunity to go to the pool compared with days when he engaged in less physical activity. To support Jacob on days when the pool visit is not feasible, the therapist used sleep coaching strategies (Sciberras et al., 2011) aimed at building consistent bedtime routines and habits. The family actively identified unhealthy bedtime habits and problem solved ways to shift to healthy practices.

Occupational Therapy Outcomes

After 8 wk, Jacob demonstrated significant progress and achieved the outcomes that were established at the beginning of occupational therapy intervention. Jacob began initiating and performing ADLs, following and maintaining sleep routines, and sustaining peer interactions. Jacob fell asleep, on average, within 20 min of going to bed and slept for an average of 7 hr. His grandmother reported improved daily functioning for the family (i.e., less conflict) because the sleep quality of everyone in the home had improved. Jacob's ratings on the Waisman Activities of Daily Living Scale (Maenner et al., 2013) increased from "does with help" to "does independently" for dressing and grooming. Jacob initiated play with two peers on the playground within 10 min and engaged in parallel play (e.g., swinging on swings and singing with a peer) and cooperative play (e.g., playing tag) without adult assistance.

Conclusion

Occupational therapy practitioners use child- and family-centered care principles to provide services to children in their natural environments. The child's natural or typical context provides opportunities to practice skills while contending with unique and sometimes unanticipated factors. Such occasions encourage problem solving and collaboration among the occupational therapy practitioner, the child, and the child's family members. Occupational therapy practitioners should collaborate with family to design interventions to address self-care, sleep, and social participation through the use of functional tasks, play-based activities, education, coaching, and cognitive strategies. ■

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