

---

# Parent Perspectives of Occupational Therapy Using a Sensory Integration Approach

Ellen S. Cohn

Key Words: family • outcome study • quality of life

*This qualitative study explored parents' points of view regarding their children's participation in occupational therapy using a sensory integration approach. Data were collected through parent interviews and were analyzed using grounded theory methods. The parents' perceptions of the benefits of therapy for their children were categorized into three interrelated constructs: abilities, activities, and reconstruction of self-worth. For themselves, parents valued understanding their children's behavior in new ways, which facilitated a shift in expectations for themselves and their children, having their parenting experience validated, and being able to support and advocate for their children. Implications for family-centered intervention and future research are proposed.*

Cohn, E. S. (2001). Parent perspectives of occupational therapy using a sensory integration approach. *American Journal of Occupational Therapy*, 55, 285–294.

Sensory integration approaches are the most widely researched intervention within pediatric occupational therapy (Miller & Kinnealey, 1993). Ayres (1972) reported that occupational therapy using sensory integration approaches, when coupled with special education, was a promising method for improving academic scores of children with learning disabilities. Since then, various authors have investigated Ayres's claim. Ottenbacher's (1982) meta-analysis of eight studies concluded that empirical support exists for the efficacy of occupational therapy using sensory integration approaches, whereas subsequent reviewers have claimed that the evidence in support of sensory integration approaches was inconclusive (Arendt, Mac Lean, & Baumeister, 1988; Daems, 1994; Polatajko, Kaplan, & Wilson, 1992; Schaffer, 1984; Spitzer, Roley, Clark, & Parham, 1997; Vargas & Camilli, 1999; Wilson & Kaplan, 1994). Although much of this research indicates that sensory integration approaches are effective in increasing children's motor, sensory processing, and academic skills, no definitive conclusions can be drawn regarding efficacy.

Many studies regarding the efficacy of sensory integration approaches have relied on measures of performance components for outcome evaluation. Use of perceptual, motor, sensory, and cognitive scales has narrowed the focus of the research. To broaden our understanding of outcomes, researchers have identified the need to understand the outcomes of occupational therapy from the child and family perspective (Bundy, 1991; Butler, 1995; Cohn & Cermak, 1998; Parham & Mailloux, 1996; Roley & Wilbarger, 1994).

In an era when health care reforms mandate that the consumer be included as an active participant in developing the intervention (Christiansen, 1996), understanding

Ellen S. Cohn, ScD, OTR/L, FAOTA, is Clinical Associate Professor, Boston University, Sargent College of Health and Rehabilitation Sciences, 635 Commonwealth Avenue, Boston, Massachusetts 02215; [ecohn@bu.edu](mailto:ecohn@bu.edu).

*This article was accepted for publication May 17, 2000.*

the consumers' perspective is crucial (Brown & Bowen, 1998; Simeonsson, Edmondson, Smith, Carnahan, & Bucy, 1995). Parents have provided ardent testimonials that occupational therapy using sensory integration approaches improves the quality of their family life (Anderson & Emmons, 1995; Occupational Therapy Associates, 1995). These testimonials suggest that parental satisfaction with therapy outcomes is an important domain for outcomes research. Although authors have described parents' points of view related to early intervention (Case-Smith & Nastro, 1993; Hinojosa, 1990; Hinojosa & Anderson, 1991; Miller & Hanft, 1998; Washington & Schwartz, 1996), similar discussions of parents' perspectives on occupational therapy using sensory integration approaches with older children are just emerging.

Using naturalistic program evaluation methods (Lincoln & Guba, 1985), Anderson (1993) explored parental perceptions of the impact of occupational therapy using sensory integration approaches on the daily living skills of children with autism. Parents in Anderson's study reported that their children made gains in several areas: willingness to try new play activities, socialization with other children, and ability to express emotions and desires. Furthermore, these parents reported an increase in their understanding of how sensory processing difficulties affect their children. Related research documented parents' hopes for their children before their children's participation in occupational therapy using sensory integration approaches (Cohn, Miller, & Tickle-Degnen, 2000). The parents in Cohn et al.'s (2000) study spoke about two overarching hopes for change in therapy: changes in their children and changes for themselves in their parenting occupation. Three themes pertinent to the occupation of children—social participation, self-regulation, and perceived competence—were identified, and two themes related to the occupation of parenting emerged—the desire to learn strategies to support their children and personal validation of the parenting experience. Ultimately, parents hoped to be able to sustain their family life.

The study reported here builds on Anderson's (1993) and Cohn et al.'s (2000) foundation by systematically describing parents' perceptions of occupational therapy using sensory integration approaches for their children. Understanding parents' perceptions of outcomes may help therapists to design interventions that are congruent with parents' values and support our attempts to deliver authentic, family-centered care (Lawlor & Mattingly, 1998). In addition, a framework for exploring measures that operationalize these crucial variables for further research can be developed.

## Method

To understand parent perspectives of outcomes, I used a collective case study approach (Stake, 1994). I interviewed 16 parents (14 families consisting of 12 mothers and 2 hus-

band-and-wife couples) of children who received occupational therapy using a sensory integration frame of reference at a private clinic in a northeastern U.S. suburban community. Parents of 22 children were randomly selected from a list of 42 children who met the inclusion criteria for participation. These 22 parents received a letter explaining the purpose of the study and offering them the opportunity to remove their name from the potential participant list. Those parents who did not request to be removed from the list were called to schedule interviews. Only 2 families scheduled the interviews to include both mother and father. A majority of the parents lived in single-family homes in suburban communities, and 50% held master's degrees. With the exception of 1 parent, all had college degrees. The sample was homogeneous, as all participants were White and in the moderate to affluent socioeconomic range.

The participants were parents of children 4 to 10 years of age who had documented diagnoses of some type of sensory integration dysfunction as measured by the Sensory Integration and Praxis Tests (Ayres, 1989), who participated in at least 32 1-hr therapy sessions, and who stopped therapy at least 1 month to 2 years before the interview. A minimum of 32 1-hr therapy sessions (approximately 8 months) was the criterion selected to anticipate some type of change. This criterion is based on a review of nine sensory integration efficacy studies with children with learning disabilities (Ayres, 1972, 1978; Carte, Morrison, Sublett, Uemura, & Setrakian, 1984; Densem, Nuthall, Bushnell, & Horn, 1989; Humphries, Wright, McDougall, & Vertes, 1990; Humphries, Wright, Snider, & McDougall, 1992; Law, Polatajko, Schaffer, Miller, & Macnab, 1991; White, 1979; Wilson & Kaplan, 1994). Twenty-four hours of intervention was the modal number of therapy sessions in the reviewed studies. Therefore, it is proposed that the children in the study reported here received enough therapy to anticipate some type of change.

Parents of children given a primary diagnosis of autism, pervasive developmental disorder, or fragile X were not interviewed for this study. These children may have different social-emotional and behavioral dysfunction than children without these conditions. The sample criteria are based on the assumption that they represent a relatively homogeneous subgroup of children who receive occupational therapy in private practice settings using a sensory integration framework.

## Procedure

Interviews were conducted in each family's home and ranged from 1 hr to 2 hr. I asked participants to describe a typical day with their child, what about their child led them to seek occupational therapy, and what they had hoped to gain from therapy. I also asked whether they saw changes in their child and, if so, to describe an incident that illustrated the change. Finally, I asked whether changes they had hoped for had not occurred and how they came

to a decision to stop therapy. Each interview was audio-taped, transcribed, and checked by thorough review and comparison between the transcript and the original audio-tape. Throughout the research process, I wrote reflective memos to record my immediate reactions to the interviews, and I wrote periodic analytical memos (Miles & Huberman, 1994) to record my evolving thoughts related to the research question and process. Recruitment was stopped after the 16th participant because I had reached a point at which findings from newly collected and analyzed data became redundant (Strauss & Corbin, 1998).

### *Data Analysis*

To develop new insights, Frank (1997) recommended systematically examining our theoretical concerns and reflecting on our own views. Rather than eliminating our subjective reactions, Frank has encouraged us to use our reflections productively for insight and analysis. In the spirit of reflexivity, I acknowledge the influences of my own background as both a parent of school-aged children and an occupational therapist who has provided occupational therapy using a sensory integration approach. As a parent, I know firsthand the experiences of striving to nurture children's growth and sense of competence. My parenting experience has taught me that sustaining the family system is a complex endeavor in which I must continually strive to understand my children's behavior in relation to the challenges in their worlds. As an occupational therapist, I try to provide therapy that ultimately makes a meaningful difference for children in the contexts in which they live, learn, and play. I carry an underlying assumption that occupational therapy is effective and can contribute to changes in children and the entire family system. However, I also believe and have documented elsewhere (Cohn & Cermak, 1998) that we have not empirically examined which outcomes of occupational therapy are important to parents who bring their children for intervention. Further, my interpretations are informed by a recent analysis of parental hopes for therapy outcomes (Cohn et al., 2000).

Using grounded theory procedures recommended by Strauss and Corbin (1998), I reviewed the transcripts to name and categorize changes described by parents. The experience of change is not always a straightforward formulation, and not all parents interviewed had positive or definitive perceptions of the benefits of occupational therapy using sensory integration approaches. Even though some parents questioned the value of intervention, they all reported that their children thoroughly enjoyed occupational therapy and were always eager to attend and that the therapy was a very positive experience for their children. The transcripts were divided into two classifications: positive and questionable perceptions of intervention. A new set of questions emerged from this distinction: For the parents who attributed positive outcomes to occupational therapy, what were the benefits they valued? What was

missing for the parents who did not perceive definitive benefits? These questions were explored in the interpretative process. The specific themes in the positive and questionable categories were compared and contrasted to detect similarities and differences across all the transcripts. The QSR NUD\*IST 4.0 (Non-numerical Unstructured Data-Indexing Searching & Theorizing) (1997) qualitative data analysis software was used to manage and explore the data.

To strengthen credibility and ensure that participants' perspectives were accurately represented, I prepared written summaries of each interview and sent them to participants for review. I then contacted each participant by phone to discuss the summaries and on the basis of their feedback, made modifications to the summaries as needed. I analyzed the summaries along with the interview data. Further, I rigorously examined the data to search for data samples that might be inconsistent with emerging concepts. Finally, peer examination was used to check categories developed from the data analysis. The transcripts were analyzed by a group of eight occupational therapists, each with more than 5 years of experience providing occupational therapy using sensory integration approaches, to discuss evolving concepts. To honor confidentiality, pseudonyms are used throughout this article.

### **Findings and Interpretation**

Before examining parents' perceptions of the outcomes of occupational therapy using sensory integration approaches, we need to understand the reasons why parents seek the services of occupational therapists. A review of participants' responses to the question, "At what point did you decide to seek therapy for your child," revealed a common concern. All participants worried that their children were not "fitting in" or "keeping up" with their peers. Donna, the mother of a now 7-year-old boy, described her son's rejection from kindergarten: "I applied for him to attend kindergarten at the private school where my other son was attending. It is pretty common for them to just accept siblings, and they didn't [accept him]."

Bonnie worried about her daughter's behavior on the school playground. Her daughter would be pacing the playground by herself rather than playing with other children. During parent-teacher conferences, Bonnie's main concern was always about friendships. Bonnie explained that other parents were concerned about academics, but she was focused on her daughter's social world.

Another mother, Janet, worried that her son "was just so incredibly far behind his classmates. He was so taken up with the basic tasks that he couldn't get on to doing anything fun." During preschool, Jenny's mother noticed that her daughter was "10 steps behind everyone else" in her dance class. She observed that Jenny could not process what the dance teacher was saying. The following year in kindergarten, Jenny's teacher reported that Jenny was "just not getting it." To the teacher, Jenny seemed too scared to

move around in her environment.

A few mothers worried that their children's aggression and social problems interfered with social participation. Darcy sought the services of occupational therapy because she had a big "teddy bear" kind of kid who was hurting other children. She was concerned about his relationships with peers:

He didn't know his own force. He would go to give a person a hug, and he would just about strangle them because he couldn't feel [his own strength]. He didn't mean to hurt his friend because he is not that kind of kid. He was hurting people without realizing because it wasn't hurting him. He didn't feel that he had connected with somebody. He was acting in a way that was unacceptable.

Darcy reflected on the impact of her son's condition. She recalled, "I was a wreck. I couldn't believe we had a bully as a child. It wasn't what I saw as my vision for my child."

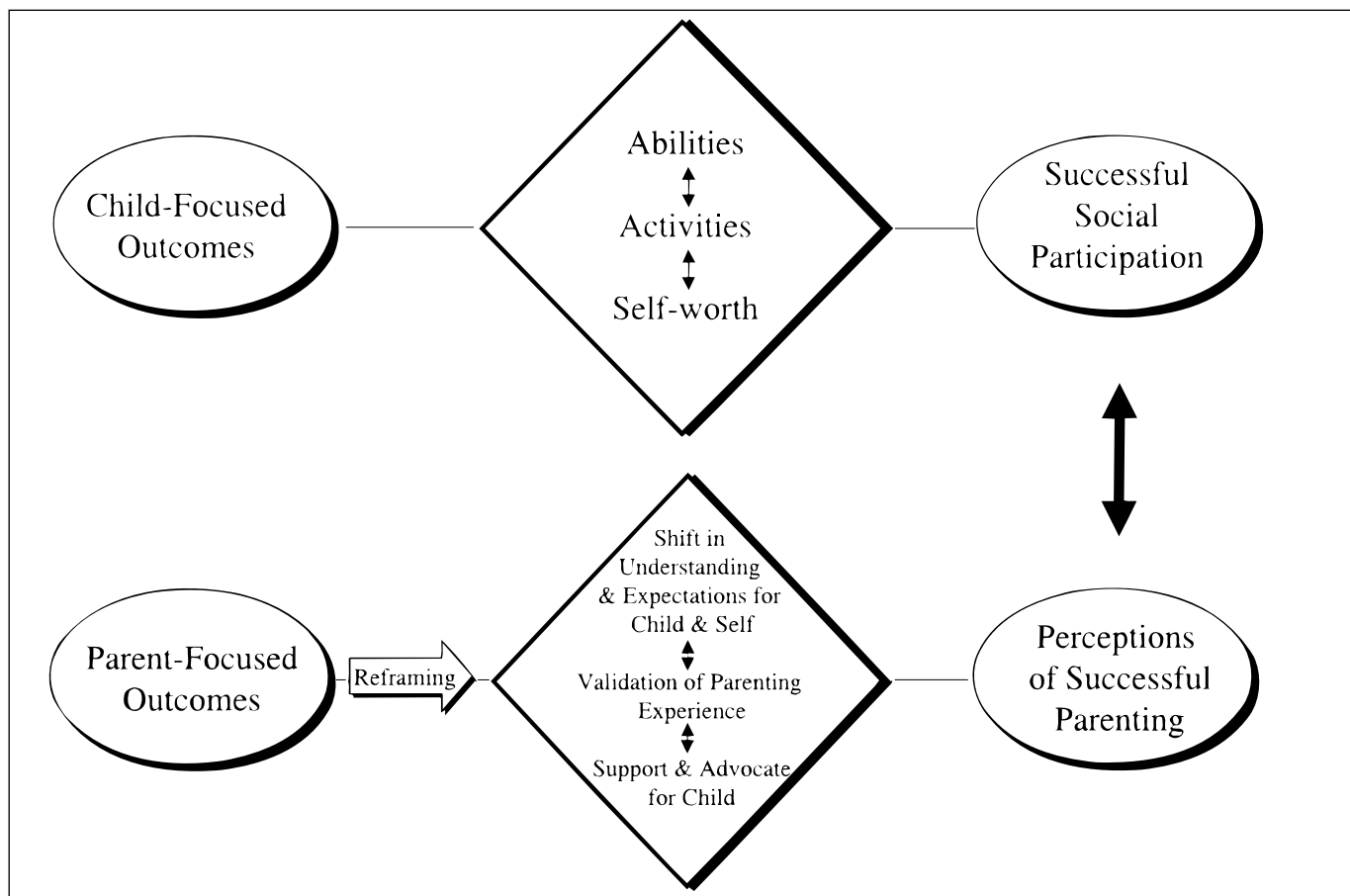
These stories echo the words of parents who brought their children for occupational therapy using sensory integration approaches reported by Cohn et al. (2000). The parents hoped that their children would develop behavior and skills needed to "fit in," belong, or be included in school, home, and the community. Coster (1998) defined such hopes and reasons for bringing children to occupational therapy as social participation: "active engagement in the typical activities available to and/or expected of peers in the same context" (p. 341). Given that the parents in the present study also brought their children to occupational

therapy because they were concerned about their children's social participation, it is not surprising that the most valued and significant changes reported by these parents were changes that opened children and parents to the possibility that their children could succeed in the social world in which they live, learn, and play.

Another similarity to Cohn et al.'s (2000) parental hopes research is that the parents in this study also reported changes that can be categorized as child-focused and parent-focused. Although these categories were identified in previous research, the distinctions between child-focused and parent-focused benefits emerged in all of the parent interviews in this study as well.

### *Child-Focused Outcomes*

Within the overarching category of child-focused outcomes, the parents' perceptions of the benefits or outcomes of therapy can be categorized into three interrelated constructs: abilities, activities, and reconstruction of self-worth (see Figure 1). The constructs are ordered according to their objectivity. That is, improvements in abilities are directly observable, whereas reconstruction of self-worth is more subjective. Conversely, the participants reported that they valued improvements in their children's self-worth more than they valued improved abilities. They viewed their children's improvements in abilities and engagement in activities as contributing to their children's reconstruc-



**Figure 1.** Parent's perspectives of therapy outcomes.

tion of self-worth. Thus, the term *social participation* captures the integration of all three child-focused outcomes valued by parents.

**Abilities.** Participants spoke about objective and observable changes in their children's abilities. Trombly (1995) defined abilities as "skills that one has developed through practice and that underlie many different activities" (p. 962). Trombly gave the example of eye-hand coordination as an ability that "emanates from developed capacities that the person has gained through learning or maturation" (p. 962). These abilities can be described and observed as things that occur within the body. All of the participants, even those who questioned the value of occupational therapy, were able to describe concrete, directly observable changes in their children. Ira's mother was able to see that his "fine motor skills" came a long way, and Wilma's mother noticed that her daughter's "balance and coordination" improved: "Her balance is better. Her coordination is better. She does more gross motor things. Her inner coordination is better."

Janet pointed out that her son's condition was not very extreme and that it was hard to know whether therapy helped, but she was clear that he "definitely got much stronger. His physical self is much more together."

Although Randy's mother also questioned whether occupational therapy made her son's or her life easier, she was able to objectively observe that her son's "upper body strength got stronger." Further, she noted a change in her son's "body and spatial awareness." She said that when Randy was small, he was unable to climb through a tunnel because he could not figure out where he was in relation to the tunnel. By the end of therapy, Randy knew where his body was in space. Although Randy's mother described these changes in Randy's abilities, she continued to question whether occupational therapy intervention helped him to "fit into his world," which as she said, "is what parents really care about."

The participants did not identify deficits in their children's abilities as a reason for seeking occupational therapy; rather, they had focused on problems with social participation. However, abilities were observable outcomes that these parents could easily identify. Even the participants who questioned the value of occupational therapy were able to identify improved abilities. One father who questioned the value of occupational therapy paradoxically stated that therapy helped his daughter's "motor functions, but the correlation [with other areas of performance] was not an obvious one." This father's comments echo the views of other participants who had questionable perceptions of occupational therapy.

**Activities.** Participants who clearly described benefits of occupational therapy using sensory integration approaches reported that their children used their newfound abilities to enhance participation in activities. The term *activity* used here is based on the World Health Organization's (1999)

ICIDH-2 definition, which defines activity in the broadest sense to capture everything that a person does at any level of complexity from simple activities to complex skills and behaviors. The participants' descriptions of various activities can be further categorized into organized activities, play, and personal care.

Organized activities are defined as "uses of time that are purposive, ongoing, structured, and more or less voluntarily chosen (although parental and peer pressures may influence the process of making choices)" (Medrich, Roizen, Rubin, & Buckley, 1982, p. 158). Many of the organized activities mentioned by participants were either sports-related or lessons. For example, Darcy was proud that her son was now accomplished in soccer and loved basketball. She believed that these were activities he never could have done before therapy. Allison's mother hypothesized a link between her daughter's abilities and her participation in dance lessons: "[Allison] really enjoyed OT [occupational therapy]. It might have helped her with her coordination. She wasn't a very coordinated person, but she does ballet now...and she loves [the classes]." Jenny's mother also hypothesized that occupational therapy contributed to her daughter's emerging ability to participate in organized activities, such as gymnastics or swimming lessons:

Amazingly, she was able to take gymnastics from second through fourth grade...she's so determined with gymnastics. She worked on it and she could finally do a handstand....And she was able to swim in the deep end....She used to jump in and come right back out.

Participants also reported changes in their children's abilities to participate in personal care activities. Personal care "refers to those activities that are essential to taking care of one's body, such as eating, dressing, grooming, bathing, and management of oral and toilet hygiene" (Primeau & Ferguson, 1999, p. 485). Rebecca reflected that her son is now able to be independent in dressing himself. She recalled that in the days before he received occupational therapy, dressing himself was a challenge. Diane told a similar story about her daughter: "[Before therapy], it took a long time for her to be able to dress herself and get all that stuff organized in the morning. She's been able to do that for 2 years now."

Play, which some authors argue is the primary occupation of children (Bundy, 1993; Parham & Primeau, 1997; Primeau & Ferguson, 1999), was another activity in which parents reported changes in their children's performance. Donna reflected on her son's advances in play after therapy: "After that first year [of therapy] we went away for the summer, and he just did a lot of running and things that kids do in the summer, and I just thought he had made enormous progress." Diane told a story about her daughter's sheer delight once she was able to master play activities:

She was finally able to participate on the playground. She was able to do the monkey bars for the first time. She was just so happy....The first time she could ride a bike...was so meaningful for her because she was probably a year behind the other kids.

*Reconstruction of self-worth.* A third child-focused outcome, reconstruction of the child's self-worth, was highly valued by the participants. On the basis of Harter's (1983) work, Mayberry (1990) defined self-worth as a general evaluation of the way we feel about the self-concept domains that are important to us, including competencies that we recognize in ourselves and perceived social acceptance by persons who are important to us. Bonnie was most pleased about her daughter's changed feelings about herself: "I could see she was happier. Psychologically, there was a dramatic change over time....The therapist was tremendous with helping her accept herself....She felt better about herself, and she felt it was helping." Noting changes in her son, Donna reported:

He would just be so invigorated and a new person. That is what I remember about OT. I would bring one child and would come home with a different child. The experience of having all that physical input made him happy....I would see it right after a session.

The parents also perceived that occupational therapy enabled their children to take more risks. Linda attributed her daughter's willingness to try new things to therapy: "She has learned how to take more risks. When she was first there, when she came upon something that was hard for her, she just stepped back. She has gotten better at taking risks." Linda talked about changes in her daughter Wilma's sense of self as providing a foundation for the future. Linda suggested that Wilma was going to have to work hard and that Wilma now knew about making mistakes and persevering. According to Linda, occupational therapy taught Wilma "how to learn" and provided her with the internal experience that she could derive satisfaction in the things she attempted. Therapy became a catalyst for Wilma to imagine the things she might do in the future.

Earlier research reported similar findings (Anderson, 1993; Ayres & Mailloux, 1983), documenting that after occupational therapy using sensory integration approaches, parents of children with autism noted changes in their children's self-worth, illustrated by gains in initiation to seek challenges or take risks. Further, using physical therapy principles, Schoemaker, Hijlkema, and Kalverboer (1994) documented that therapy may have a potent impact on a child's self-worth and willingness to engage in motor activities. These potential changes in self-worth can be interpreted using White's (1959) effectance motivation model. White claimed that children will work toward mastery if they believe that their attempts will be successful. Building on White's notion, Harter (1978) proposed that children's perceived competence was related to their previous attempts at mastery within a particular context or domain, and this perceived competence affected children's motivation to participate in activities in that domain. Enhanced willingness to engage in activity is consistent with Ayres's premise that sensory integration may "enable further purposeful activity" (Ayres & Mailloux, 1983, p. 536).

### *Parent-Focused Outcomes*

The parent-focused outcomes are inextricably linked to the children's constructions of self-worth. Perhaps the most robust finding is that participants reported numerous benefits from understanding their children's behaviors from a sensory processing perspective. In defining the consultative role of occupational therapy, Bundy (1991) proposed that "reframing," a process of enabling others to understand the client's behavior in a new way or from a different perspective, can help consultees understand the client, develop effective strategies for interacting with the client, and provide parents with a basis for more satisfying parenting experiences. Bundy's notion of reframing is based on Toulmin's (1953) argument that reframing is a form of science in which we learn to see data in new ways. Reframing involves "seeing" or "hearing" differently.

As depicted in Figure 1, the participants suggested that such reframing facilitated a shift in expectations for themselves and their children, validated their parenting experience, and enabled them to support and advocate for their children. Together, these by-products of reframing ultimately opened participants to the possibility that they could be successful parents and their children could become successful participants in their worlds. As participants understood their children's behavior from a sensory processing perspective, they became more accepting of their children. This acceptance, participants believed, led to improved sense of self-worth in their children. Bonnie's perspective vividly illustrates this perceived connection:

[OT] helped us accept her needs and it helped her accept her own needs. From that perspective, I think it calmed us all down. It made us less frantic about trying to fit into this mold of a child that doesn't exist. And it made us all more accepting of her behaviors....It helped us try to work with her needs and not just our needs for her....I began to understand her needs. That was important. Psychologically she was getting hurt because she was thinking she was a bad person....My child was incredibly happier as a result, and that was a really important measurement for me. I could see she was happier. [The OT] was tremendous with helping her accept herself.

#### *Shift in understanding and expectations for child and self*

All of the participants had a desire for their children to become greater social participants in their worlds; some also imagined that occupational therapy might cure their child's problem. Rebecca hoped that therapy would fix her child's problem, and Darcy hoped that therapy would make her son "normal." Olivia actually used the word cure and later in her interview made an analogy to ear infections. She reflected that she had initially hoped for a cure but learned that her son's sensory integration problems were not as clear-cut as an ear infection and that there was no "medicine" to make the condition go away. Rather than viewing their children's condition as something that "needed fixing," the majority of participants described how their expectations for their children and themselves as parents shifted.

Diane found that her knowledge of her daughter's sensory processing enabled her to be more supportive of her

daughter: "If she is goofing off with a kazoo, I know it is helping her. [In the past], I might have said, 'Stop it.' The self-calming techniques that kids naturally do, I understand them better." Olivia told a story quite typical of many children with tactile sensitivity:

One thing that's driving me crazy is when he puts his socks and shoes on and then feels a wrinkle or something, he takes his shoes off again. For him, this is a big problem. It's just driving him crazy. I got to understand that a little better. I take into account that he is not doing it on purpose and that I should be more patient.

Ira's mother claimed that she learned to be aware of the kind of person her son is and be more aware of his concerns. At first, she thought his behaviors were just "typical boy" behaviors, but now she believes that she is more sensitive to his needs and tries to structure the day to meet them: "[OT] taught me to be more aware of him as a person who is different than what you might expect. And it kind of helped me focus on what he does."

*Validation of parenting experience.* Cohn et al. (2000) documented that parents seek validation of the challenges inherent in parenting children with sensory integration problems. Many participants concurred that new understandings of their children helped validate earlier experiences. Donna was relieved to understand her son's early experiences from a different perspective: "It kind of clarified his whole nursery school experience, why it was unpleasant for him....When I read his [OT] report I thought, 'That's why nursery school was so tough for him.'" Randy shared similar sentiments:

The kid was born super sensitive to sound, and it was very helpful when the tests were done. Not just to affirm that I wasn't insane but in trying to understand some of the things that were difficult for him.

These two examples also are reflective of many of the other participants' sentiments.

*Support and advocate for child.* Participants used their new understanding of how their children process sensory information to advocate and communicate with school personnel. Olivia said, "[My understanding of my son's sensory processing] gave me a chance to sit down at the beginning of the school year and say, 'This child does have particular concerns.'" Olivia was particularly pleased that the therapists who worked with her son gave her "very useful hints on everyday little problems." She recalled a time when her son was in a holiday play at school. He could not tolerate a headpiece he was supposed to wear, and the therapist gave her good ideas on how to change the costume. Peggy learned to advocate with teachers to allow her child to hold objects in her hand during circle time. She told one teacher that her daughter had trouble sitting on the floor during circle time. The teacher eliminated sitting on the floor altogether so that her daughter would "fit in" with the rest of the class.

## Implications for Practice

The findings from this study suggest that the parents who attributed positive outcomes to occupational therapy per-

ceived changes in three domains of their children's functioning: abilities, activities, and sense of self-worth. They described how changes in one domain affected the other areas of functioning. The participants who questioned the benefits of occupational therapy did not describe interrelationships between their children's abilities and their children's broader social world. It is unknown whether these participants understood the therapists' assumption that improvements in abilities might influence engagement in activities and improve self-worth. Conversely, these participants may have understood this assumption of sensory integration theory but just did not observe relationships among improved abilities, activities, and self-worth in their children. The insights gained from the study highlight the importance of striving to understand parents' expectations for therapy and how they are making sense of what is occurring in and as a result of therapy. Parents' perceptions may serve as a powerful indicator of whether therapy has had an impact on aspects of the child's life considered important by the parents.

Although some participants were initially searching for a cure for their children's condition, all reframed their expectations. After their children participated in occupational therapy, many participants envisioned a future for their children that included ongoing acceptance, accommodation, and advocacy. They valued this reframing or reconstruction of expectations for their children and themselves as parents. Similar findings have been reported in the early intervention literature. Parents of younger children who received occupational therapy also valued the support, information, and strategies learned to enhance their parenting (Case-Smith & Nastro, 1993; Hinojosa, 1990; Washington & Schwartz, 1996). All of these studies remind us to consider the broader context in which children live and to design interventions that move beyond "fixing the person" (Brown & Bowen, 1998, p. 56). One way to develop goals and interventions that are congruent with parents' concerns and that move beyond direct intervention is to ask parents and children questions that relate to the social world in which they live, work, and play. Children's everyday life should be the beginning point of our evaluation process.

Moreover, supplementing the use of standardized scales, which predetermine and potentially constrict the constructs we measure, with tools that allow children and parents to identify important life goals and rate their importance may assist us in providing therapy that is more congruent with our consumers' goals. The School Function Assessment (Coster, Deeney, Haltiwanger, & Haley, 1998), which measures social participation in the school setting, and The Pediatric Interest Profiles (Henry, 2000), which describes participation in play activities, are two newly developed tools that attend to participation from the consumer's perspective.

The finding that reconstruction of self-worth was a

valued outcome by the participants suggests that it is important for therapists to monitor how our young consumers perceive themselves across the various contexts of their everyday life. Children's experiences of therapy and everyday life is critical to our evaluation of the value of therapy. Willoughby, King, and Polatajko (1996) urged therapists to use psychometrically and conceptually sound measures to monitor the "domains of self-worth" most meaningful to children and families. The All About Me Scale (Missiuna, 1998), which evaluates young children's perceptions of their self-efficacy in the performance of fine and gross motor activities, offers therapists a tool to begin to document one dimension of the construct of self-worth. The domains of scholastic competence, athletic competence, self-care competence, behavioral competence, and social competence are also important for occupational therapists to consider when trying to understand a child's perceived self-worth (Willoughby et al., 1996).

### Implications for Research

Given the paucity of data on consumers' perspectives on occupational therapy using sensory integration approaches, additional research is recommended. Some participants hypothesized that their children's improved abilities contributed to enhanced participation in activities and reconstruction of self-worth. Based on Coster's (1998) conceptualization, I have categorized these perceived outcomes as "social participation." These hypothesized relationships between abilities and social participation are likely to be complex and require further elaboration and empirical validation. Moreover, further exploration is necessary to understand why some parents did not perceive changes in their children's abilities, activities, and self-worth. Is the lack of perceived change based on children's actual occupational performance, or might parents' lack of perceived change be related to unclear expectations of occupational therapy using a sensory integration approach?

The parent-focused outcomes also require further elaboration and empirical examination. Many questions related to the hypothetical interrelationships among the child-focused and parent-focused outcomes remain. Of particular concern is whether changes in parents' understanding and expectations, validation of the parenting experience, and parents' support and advocacy for their children relate to parents' sense of themselves as successful parents. Do parenting changes, in turn, relate to social participation for their children? Although there is emerging evidence documenting the relationship of parents' beliefs and children's achievement (Goodnow, 1988; Murphey, 1992), research efforts are needed to explicate all of the proposed connections. Further, we have yet to determine whether the outcomes proposed in this study are present in the broader population of consumers of occupational therapy using sensory integration approaches.

The participants were from White middle and upper socioeconomic status families; thus, the perspectives of other populations remain unknown. Moreover, the school setting is central to children's lives, and the perspectives of teachers were not included in this study. Finally, and perhaps most importantly, the voices of the children themselves were not heard. Therefore, one of the many challenges facing future researchers is to listen to other persons in the world of children as well as to the children themselves. Ultimately, we need a new understanding of therapy that emphasizes the relationship between therapy and the everyday lives of children and families. ▲

### Acknowledgments

I extend a special note of gratitude to the parents who shared their time and perspectives. I value and thank my dissertation committee members, Linda Tickle-Degnen, PhD, OTR/L, Wendy Coster, PhD, OTR/L, FAOTA, Cathy Riessman, PhD, and Jane Koomar, PhD, OTR/L, FAOTA, for their insightful critiques. Much appreciated for their assistance are Teresa May-Benson, MS, OTR/L, and all the therapists at OTA-Watertown, P.C., Watertown, Massachusetts.

This study was conducted in partial fulfillment of the requirement for the Doctor of Science degree at Boston University, Sargent College of Health and Rehabilitation Sciences. It was supported in part by a grant from the American Occupational Therapy Foundation, the Anne Henderson Doctoral Scholarship, and a grant to Boston University from the U.S. Department of Health and Human Services, Health Resources and Services Administration, Maternal and Child Health Bureau (MCJ-000-901).

### References

- Anderson, E. L. (1993). *Parental perceptions of the influence of occupational therapy utilizing sensory integrative techniques on the daily living skills of children with autism*. Unpublished master's thesis, University of Southern California, Los Angeles.
- Anderson, E., & Emmons, P. (1995). Sensory integration: The hidden disorder. *Sensory Integration Quarterly Newsletter*, 23(2/3), 8-9.
- Arendt, R. E., Mac Lean, W. E., & Baumeister, A. A. (1988). Critique of sensory integration therapy and its application in mental retardation. *American Journal on Mental Retardation*, 92, 401-411.
- Ayres, A. J. (1972). Improving academic scores through sensory integration. *Journal of Learning Disabilities*, 5, 24-28.
- Ayres, A. J. (1978). Learning disabilities and the vestibular system. *Journal of Learning Disabilities*, 11, 30-41.
- Ayres, A. J. (1989). *Sensory Integration and Praxis Tests*. Los Angeles: Western Psychological Services.
- Ayres, A. J., & Mailloux, Z. (1983). Possible pubertal effect on therapeutic gains in an autistic girl. *American Journal of Occupational Therapy*, 37, 535-540.
- Brown, C., & Bowen, R. E. (1998). Including the consumer and environment in occupational therapy treatment planning. *Occupational Therapy Journal of Research*, 18, 44-62.
- Bundy, A. C. (1991). Consultation and sensory integration theory. In A. G. Fisher, E. A. Murray, & A. C. Bundy (Eds.), *Sensory integration: Theory and practice* (pp. 318-332). Philadelphia: F. A. Davis.
- Bundy, A. C. (1993). Assessment of play and leisure: Delineation of the problem. *American Journal of Occupational Therapy*, 47, 217-222.
- Butler, C. (1995). Outcomes that matter [Editorial]. *Developmental Medicine and Child Neurology*, 37, 753-754.
- Carte, E., Morrison, D., Sublett, J., Uemura, A., & Setrakian, W. (1984). Sensory integration therapy: A trial of a specific neurodevelopmental therapy for remediation of learning disabilities. *Journal of Developmental Behavioral Pediatrics*, 5, 189-194.



- Case-Smith, J., & Nastro, M. A. (1993). The effect of occupational therapy intervention on mothers of children with cerebral palsy. *American Journal of Occupational Therapy*, 47, 811–817.
- Christiansen, C. (1996). Nationally Speaking—Managed care: Opportunities and challenges for occupational therapy in the emerging systems of the 21st century. *American Journal of Occupational Therapy*, 50, 409–412.
- Cohn, E. S., & Cermak, S. A. (1998). Including the family perspective in sensory integration outcomes research. *American Journal of Occupational Therapy*, 52, 540–546.
- Cohn, E. S., Miller, L. J., & Tickle-Degnen, L. (2000). Parental hopes for therapy outcomes: Children with sensory modulation disorders. *American Journal of Occupational Therapy*, 54, 36–43.
- Coster, W. (1998). Occupation-centered assessment of children. *American Journal of Occupational Therapy*, 52, 337–344.
- Coster, W. J., Deeney, T., Haltiwanger, J., & Haley, S. M. (1998). *School function assessment*. San Antonio, TX: Psychological Corporation/Therapy Skill Builders.
- Daems, J. (Ed.). (1994). *Reviews of research in sensory integration*. Torrance, CA: Sensory Integration International.
- Densem, J. F., Nuthall, G. A., Bushnell, J., & Horn, J. (1989). Effectiveness of a sensory integration therapy program for children with perceptual-motor deficits. *Journal of Learning Disabilities*, 22, 221–229.
- Frank, G. (1997). Is there life after categories? Reflexivity in qualitative research. *Occupational Therapy Journal of Research*, 17, 84–98.
- Goodnow, J. J. (1988). Parents' ideas, actions, and feelings: Models and methods from developmental and social psychology. *Child Development*, 59, 286–320.
- Harter, S. (1978). Effectance motivation reconsidered: Toward a developmental model. *Human Development*, 21, 34–64.
- Harter, S. (1983). The development of the self-system. In M. Hetherington (Ed.), *Carmichael's manual of child psychology: Social and personality development* (pp. 275–385). New York: Wiley.
- Henry, A. D. (2000). *Pediatric Interest Profiles: Surveys of play for children and adolescents*. San Antonio, TX: Therapy Skill Builders.
- Hinojosa, J. (1990). How mothers of preschool children perceive occupational and physical therapists and their influence on family life. *Occupational Therapy Journal of Research*, 10, 144–162.
- Hinojosa, J., & Anderson, J. (1991). Mothers' perceptions of home treatment programs for their preschool children with cerebral palsy. *American Journal of Occupational Therapy*, 45, 273–279.
- Humphries, T., Wright, M., McDougall, B., & Vertes, J. (1990). The efficacy of sensory integration for children with learning disability. *Physical and Occupational Therapy in Pediatrics*, 10(3), 1–17.
- Humphries, T. W., Wright, M., Snider, L., & McDougall, B. (1992). A comparison of the effectiveness of sensory integrative therapy and perceptual-motor training in treating children with learning disabilities. *Journal of Developmental and Behavioral Pediatrics*, 13, 31–40.
- Law, M., Polatajko, H. J., Schaffer, R., Miller, J., & Macnab, J. (1991). The impact of heterogeneity in a clinical trial: Motor outcomes after sensory integration therapy. *Occupational Therapy Journal of Research*, 11, 177–189.
- Lawlor, M. C., & Mattingly, C. F. (1998). The complexities embedded in family-centered care. *American Journal of Occupational Therapy*, 52, 259–267.
- Lincoln, Y. S., & Guba, E. G. (1985). *Naturalistic inquiry*. Beverly Hills, CA: Sage.
- Mayberry, W. (1990). Self-esteem in children: Considerations for measurement and intervention. *American Journal of Occupational Therapy*, 44, 729–734.
- Medrich, E. A., Roizen, J. A., Rubin, V., & Buckley, S. (1982). *The serious business of growing up: A study of children's lives outside school*. Berkeley, CA: University of California.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative data analysis* (2nd ed.). Thousand Oaks, CA: Sage.
- Miller, L. J., & Hanft, B. E. (1998). Building positive alliances: Partnerships with families as the cornerstone of developmental assessment. *Infants and Young Children*, 10, 1–12.
- Miller, L. J., & Kinnealey, M. (1993). Researching the effectiveness of sensory integration. *Sensory Integration Quarterly*, 21(2), 1–7.
- Missiuna, C. (1998). Development of "All About Me," a scale that measures children's perceived motor competence. *Occupational Therapy Journal of Research*, 18, 85–108.
- Murphy, D. A. (1992). Constructing the child: Relations between parents' beliefs and child outcomes. *Developmental Review*, 12, 199–232.
- Occupational Therapy Associates. (1995, Spring). *The sensory connection*. Watertown, MA: Author.
- Ottenbacher, K. (1982). Sensory integration therapy: Affect or effect. *American Journal of Occupational Therapy*, 36, 571–578.
- Parham, L. D., & Mailloux, Z. (1996). Sensory integration. In J. Case-Smith, A. S. Allen & P. N. Pratt (Eds.), *Occupational therapy for children* (3rd ed., pp. 307–355). St. Louis, MO: Mosby.
- Parham, L. D., & Primeau, L. A. (1997). Play and occupational therapy. In L. D. Parham & L. S. Fazio (Eds.), *Play in occupational therapy for children* (pp. 2–21). St. Louis, MO: Mosby.
- Polatajko, H., Kaplan, B., & Wilson, B. (1992). Sensory integration for children with learning disabilities: Its status 20 years later. *Occupational Therapy Journal of Research*, 12, 323–341.
- Primeau, L. A., & Ferguson, J. M. (1999). Occupational frame of reference. In P. Kramer & J. Hinojosa (Eds.), *Frames of reference for pediatric occupational therapy* (pp. 469–516). Philadelphia: Lippincott Williams & Wilkins.
- QSR NUD\*IST 4.0 [Computer software]. (1997). Thousand Oaks, CA: Scolar, Sage Publications Software.
- Roley, S. S., & Wilbarger, J. (1994, June). What is sensory integration? A series of interviews on the scope, limitations, and evolution of sensory integration theory. *Sensory Integration Special Interest Section Newsletter*, 17, 1–7.
- Schaffer, R. (1984). Sensory integration therapy with learning disabled children: A critical review. *Canadian Journal of Occupational Therapy*, 51, 73–77.
- Schoemaker, M., Hijlkema, M., & Kalverboer, A. (1994). Physiotherapy for clumsy children: An evaluation study. *Developmental Medicine and Child Neurology*, 36, 143–155.
- Simeonsson, R. J., Edmondson, R., Smith, T., Carnahan, S., & Bucy, J. (1995). Family involvement in multidisciplinary team evaluation: Parent and professional perspectives. *Child Care, Health and Development*, 21(3), 1–16.
- Spitzer, S., Roley, S. S., Clark, F., & Parham, D. (1997). Sensory integration: Current trends in the United States. *Scandinavian Journal of Occupational Therapy*, 4, 1–16.
- Stake, R. (1994). Case studies. In N. Denzin & Y. Lincoln (Eds.), *Handbook of qualitative research* (pp. 236–247). Thousand Oaks, CA: Sage.
- Strauss, A., & Corbin, J. (1998). *Basics of qualitative research*. Newbury Park, CA: Sage.
- Toulmin, S. (1953). *The philosophy of science: An introduction*. London: Hutchinson.
- Trombly, C. A. (1995). Occupation: Purposefulness and meaningfulness as therapeutic mechanisms, 1995 Eleanor Clarke Slagle lecture. *American Journal of Occupational Therapy*, 49, 960–972.
- Vargas, S., & Camilli, G. (1999). A meta-analysis of research on sensory integration treatment. *American Journal of Occupational Therapy*, 53, 189–198.
- Washington, K., & Schwartz, I. S. (1996). Maternal perceptions of the effects of physical and occupational therapy services on caregiving competency. *Physical & Occupational Therapy in Pediatrics*, 16(3), 33–54.
- White, M. (1979). A first-grade intervention program for children at risk for reading failure. *Journal of Learning Disabilities*, 12, 26–32.
- White, R. (1959). Motivation reconsidered: The concept of competence. *Psychological Review*, 66, 297–323.
- Willoughby, C., King, G., & Polatajko, H. (1996). A therapist's

guide to children's self-esteem. *American Journal of Occupational Therapy*, 50, 124–132.

Wilson, B. N., & Kaplan, B. J. (1994). Follow-up assessment of children receiving sensory integration treatment. *Occupational Therapy*

*Journal of Research*, 14, 244–266.

World Health Organization. (1999). *ICIDH-2: International classification of functioning and disability* (Beta 2 draft). Geneva, Switzerland: Author.