



SPIRAL Research News

Informed Massachusetts Physicians Support SPD

By Teresa A. May-Benson, ScD, OTR/L

Parents of children with Sensory Processing Disorder (SPD) know that obtaining therapy services for their child can be a challenge. From obtaining a referral from their pediatrician, to finding an appropriate service provider, to getting insurance reimbursement, the process may be long and frustrating. Some parents have reported that their primary care physician, neurologist, or pediatric psychiatrist was very supportive and knowledgeable about SPD while others have struggled with physicians who do not understand



SPD. This range of responses and experiences of families seeking services spearheaded the need to formally examine physician knowledge and support of SPD.

With the goal of producing educational materials for physicians, the Spiral Foundation initiated its Massachusetts Physician Education Program. Stage One of this program was to conduct an anonymous survey of Massachusetts pediatricians, neurologists, and pediatric psychiatrists to examine their beliefs and knowledge about Sensory Processing Disorder.

An eleven question survey was sent to 2400 doctors listed with the Mass State Board of Registration in Medicine. One hundred twenty-two surveys were returned for a response

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Pre/Post-Natal and Developmental Factors Associated with SPD

By Teresa A. May-Benson, ScD, OTR/L

Occupational therapists working with children with SPD consistently identify aspects of delayed or atypical developmental milestones or developmental problems as characteristic of children with SPD. To date, however, no one has empirically examined the prevalence of these types of problems in children with SPD.

To address the question of prevalence of pre-natal, birth, and early childhood health and development problems in children with SPD, a retrospective record review was conducted on 1000 children evaluated and recommended for treatment at a OTA-Watertown, a large private OT practice specializing in sensory integrative therapy.

De-identified information on the OTA Developmental and Sensory History, a parent-report questionnaire on a child's medical, birth and early childhood health problems, was reviewed for clients aged 3-14 years seen at the facility over the past ten years. (Continued on Back Page)

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Special points of interest:

- 54% of physicians responding to the Spiral survey believe OT-SI is effective for children with SPD.
- Children's sensory processing is significantly related to their coping abilities.
- Children with SPD demonstrate a high incidence of birth and re-natal problems.
- Spiral debuts Sensory Adventures Camp!!

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Spiral Staff Publications

The Spiral Foundation research staff has had a productive year distributing the results of Spiral's research projects.

A special issue of the American Journal of Occupational Therapy will be out in May/June 2007. This issue will feature four articles by Spiral's Research Director, Dr. Teresa May-Benson and Board President, Dr. Jane Koomar,

Several articles were written in collaboration with other OT researchers around the country.

The articles, which will be published in a special issue of the American Journal of Occupational Therapy in May 2007, are:

- Identifying Gravitational Insecurity in Children with SPD: A Pilot Study (May-Benson & Koomar)
- Development of a Test of Ideation (May-Benson & Cermak)
- The Issue Is: Measuring meaning outcomes in Children with SPD: Goal Attainment Scaling (Mailloux, May-Benson, et al)
- Fidelity of Sensory Integration Intervention (Parham, Cohen, Spitzer, Koomar, et al)



Teresa A. May-Benson, ScD, OTR/L Research Director



Jane A. Koomar, PhD, OTR/L, FAOTA Board President

Spiral Research Collaborations and Grants

In addition to the publications, Spiral has several collaborations with other researchers.

- Spiral received a \$12,220 research grant, "Identifying Meaningful Outcomes of Intervention Effectiveness for Children with SPD", from the Wallace Foundation to conduct a multi-site project with the STAR Center/ KID Foundation, Denver, CO.
- Spiral /OTA are collaborating with Dr. Sharon Cermak, and colleagues from Boston University, Tufts University, & the Shriver Center on a NIH grant examining Physical Fitness in Children with Developmental Coordination Disorder.
- Spiral/ OTA are collaborating with Dr. Roseann Schaaf, Thomas Jefferson University, on a Wallace grant examining physiological responses of children with autism.
- Spiral/ OTA are collaborating with Dr. Paul Dizio of Brandeis University on proprioceptive/movement processing in children with autism.

Spiral's Sensory Adventure's Camp Debuts

By Sarah Ryan, MA, OTR/L

This year the Spiral Foundation ing support of OTA-Watertown embarked upon its first summer and volunteer counselors & activity leaders, the camp aimed to provide a typical camp experience for children with SPD within a supportive sensory rich environment. The camp promoted social interaction and assisted in preparing children for the start of the new school year. Data was gathered on the effectiveness of the children's camp experiences.



"As you become more sensitive to sensory integrative functions in your child, you may be able to help him...lead a happier, more successful life." -Dr. A. Jean Ayres

Sensory Processing and Coping Skills in SPD

Teresa A. May-Benson, ScD, OTR/L

The purpose of this study was to examine the relationship of sensory processing skills to coping abilities in school-aged children with sensory processing disorder. In part one of this study, a between groups design examined differences in coping skills in two age and gender-matched groups of 30 children identified as having SPD and 30 typical peers aged 4 – 14 years. Children with SPD received treatment at Occupational Therapy Associates – Watertown, a private clinic specializing in sensory integrative intervention. Parents of both groups completed the Coping Inventory (Zeitlin, 1985). An ANOVA completed on the total adaptive behavior score for each group showed significantly poorer coping skills in the SPD group, $F(1, 58) = 63.90$, $p = .001$. A discriminative analysis was able to correctly classify both groups with 100% accuracy based on Coping Inventory scores.

In part two, parents of 47 children with SPD between 4 and 12 years of age completed the OTA – Watertown Developmental and Sensory History (Koomar, et al) and the Coping Inventory (Zeitlin, 1985) on their child at the time

of evaluation or initial treatment.

A correlation analysis between the total sensory history score and the adaptive behavior index of the Coping Inventory resulted in an $r = -.49$, $p = .0005$, indicating a strong moderate relationship between sensory processing and coping abilities. Significant relationships ($r = .27$ to $.54$) were also found between the total sensory history score and 30 of 48 individual Coping Inventory items. A correlation analysis between the adaptive behavior index and the 127 individual items of the sensory history was run to select the most important sensory history items related to coping.

A regression analysis on the summed total of the resultant 44 significant ($p < .05$) sensory history items and the adaptive behavior index identified a significant relationship between coping skills and sensory processing with the modified sensory history score accounting for 43% of the variance of the adaptive behavior index. These results suggest that sensory processing skills account for a large portion of the variability in coping abilities in children with sensory processing dysfunction.

Unveiling the Spiral Research Center and Sensory Processing Laboratory

After three years of preparation, the Spiral Research Center and Sensory Processing Laboratory is now official open.

The laboratory consists of a state-of-the-art physiology lab equipped to run the Sensory Challenge (Space Ship) protocol.

The lab will be used this upcoming year for collaborative studies with Brandeis University and Thomas Jefferson University.

References

Miller, A. 1994. Differences in coping strategies between boys with motor incoordination and learning disabilities and normally developing peers. Unpublished Master's Thesis. Boston University.

Williamson, C. G. & Zeitlin, S. 1997. Chapter 8. Intervention strategies and activities. In Coping in young children: Early intervention to enhance adaptive behavior and development. Baltimore: Paul Brooks.

Zeitlin, S. 1985. Coping Inventory: A Measure of Adaptive Behavior. Bensenville, Ill: Scholastic Testing Service.

(Paper presented at the American Occupational Therapy Association National Conference, 2001)



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MD Survey Continued:

rate of 5%, a typical survey response rate. Returns were predominately from the Boston area but included areas across the state as well as a few from Rhode Island, New York and Connecticut.

Results of the survey found 65% of the responders were very familiar with SPD with only 7% indicating they were not familiar with it at all. Similarly, 64% believed SPD was a valid, separate diagnosis and 10% did not. Those who believed in SPD as a diagnosis generally made referrals for evaluation or treatment and supported inclusion in a diagnostic manual. A small percentage (5%) were strongly opposed to including SPD in a manual and 10% have actively discouraged parents from seeking services.

Further investigation found that those physicians who had patients with SPD were more likely to believe it is a valid diagnosis, support treatment and diagnostic inclusion. Physicians who believed in the validity of the diagnosis were those who were informed about signs and symptoms, but also were informed about how OT treats this problem and that the treatment is effective. Those who believed in the validity of the diagnosis were also those who most strongly support diagnostic inclusion

The results of this study suggest that there is a small percentage of physicians in Massachusetts who are opposed to SPD. A larger, but still small percentage, are clearly supportive of parents and children with this problem, however, the largest percentage remains unknown. Survey results suggest that MD's want more information on the signs and symptoms of SPD and support for it as a separate diagnosis from other problems like ADD. They also want information on what OT – SI intervention really is, how it works, as well as information that this mode of treatment IS effective.



Pre/Post-Natal and Developmental Factors Continued

Adopted children and children with overt medical diagnoses were excluded. Three-quarters of the participants were males, confirming therapists observations that the majority of children with SPD are males.



No one problem was common to all children with SPD, supporting a diversity of the possible risk factors for SPD. In the area of pre-natal and birth-related factors, children with SPD have a moderate prevalence of mothers with pre-natal problems with 25% complications during pregnancy and 42% complications during labor or delivery. Other birth/delivery problems were greater than available national averages and included 34% assisted deliveries (e.g. vacuum, suction and forceps); 13% pre-term at 37 weeks gestation or less and 5 % umbilical cord insults including cord wrap/ prolapse.

In the area of developmental factors, children with SPD demonstrated characteristic differences in development of early childhood skills with 47% not going through terrible two's; 37 % reported by parents to have brief or absents crawling phases, and 31-32% had sleep or feeding problems. In the area of early childhood health problems, children with SPD demonstrated an increased prevalence of health problems including 62% with chronic ear infections; 27% having serious injuries or illness; 25% jaundice at birth and 20% colic as infants.

These results provide preliminary information on the patterns of early childhood problems most common in children with SPD.