Using Sensory Tools for Teens With Behavioral and Emotional Problems

dolescence is a time of rapid challenges, including emerging freedoms, responsibilities, social pressures, and development of self-identity. Increased independence requires increased responsibility for self-monitoring and effectively balancing internal drives and desires with the external pressures of socially appropriate norms, personal responsibilities, and adult expectations. Some teens, attempting to fit into a social group and manage other pressures of adolescence, have difficulty controlling their impulses, which may be related to the nervous system. Impulsivity, aggression, and risky sensory-seeking behaviors may be maladaptive. Occupational therapy using a sensory-integrative or sensory-based approach may help to identify sensory needs and to develop safe and appropriate strategies for meeting those needs.^{1,2}

The sensory integration (SI) approach has traditionally been used via direct, individual intervention. However, when selecting any intervention approach, therapists must carefully weigh the evidence of the effectiveness of various treatments (as supported in the literature), the individual client's needs and desires, and the available resources.^{3,4}

In terms of evidence, occupational therapy using an SI approach for adolescents and young adults with early psychosis has been shown to be more effective than no intervention and equally as effective as other means of intervention.⁵ In terms of client needs,

Teaching teens to self-regulate can help improve their behavior.

for adolescents with mental health issues an SI approach during group treatment may be more desirable than direct individual intervention, because group interaction may be pivotal for their social skills development.^{5,6} In terms of resources, direct individual intervention may be more costly than group interventions or indirect consultation services. Furthermore, a one-on-one SI approach, including the use of specialized equipment, may not be feasible due to limited budgets

> or limited availability of an occupational therapy practitioner. In some cases indirect treatment, including client and caregiver training to develop sensory strategies to address sensory needs in everyday life, is a feasible alternative. This approach includes cli-

ent and caregiver education and may involve the use of weighted vests or blankets; environmental modification to decrease stimuli; sensory diets; and mobile sensory boxes, also known as sensory suitcases, to allow individuals to select sensory items to aid in sensory modulation and use them in any location.

Lindley and McDaniel studied the use of a sensory room and a mobile sensory suitcase as adjunct, indirect therapeutic modalities for 144 teens ages 12 to 18 with dual mental health diagnoses who were residents of an adolescent treatment facility.7 Occupational therapists worked with the residents to develop the sensory room, which included fiber optic lights, weighted blankets, a weighted halo, beanbag chairs, massagers, surgical scrub brushes, and other objects. It was initially staffed by occupational therapists but was later monitored by trained staff members. Residents used the sensory room when they felt agitated or in "overdrive," and they were encouraged to experiment with the equipment to determine which items were soothing. Similarly, the mobile sensory suitcase, also developed by the occupational therapists and residents, contained sensory items that were used in a central lounge area, within sight of staff members. Residents could use these items at any time to promote relaxation and calming.

Lindley and McDaniel found that an estimated 80% of the residents demonstrated sensory processing difficulties upon admission, based on the Adolescent/Adult Sensory Profile.⁸ By completing a pretest/posttest selfreport questionnaire, the residents demonstrated an 84% improvement in adaptive functioning, including alertness and motor skills, after using the sensorv room and items in the sensorv suitcase. Functional improvements included a decrease in the frequency of requested PRN medications, a decrease in the amount of time spent in seclusion and/or restraint, and less frequent

chewing on household items, such as the remote control.

In 2004 Diana Henry, MS, OTR/L, FAOTA, added Sensory Integration Tools for Teens: Strategies To Promote Sensory Processing⁹ to the library of sensory tools programs, which focus on modifying the environment and providing sensory-safe activities to promote sensory processing in children, from preschoolers (Tools for Tots: Sensory Strategies for Toddlers and Preschoolers¹⁰), to children in elementary school (Tools for Teachers: Sensory Integration in the Schools¹¹), to adolescents (*Tools for Teens*⁹). The programs involve hands-on workshops conducted by Henry, along with written workbooks. The Tools for Teens program promotes collaboration between teens and their parents, teachers, and therapists. Henry's presentations and the program handbook address topics such as the teenage brain, sensory

thrill seekers, and teen spaces, in addition to providing healthy and ageappropriate alternative strategies that can be used for teens who are typically developing, as well as those experiencing challenges. The Tools for Teens program was presented at the New York State Occupational Therapy Association Conference in 2007, which faculty and students from the University at Buffalo attended. During the following semester, three students chose to apply this information to an assigned project addressing nontraditional and community-based occupational therapy settings. The students used Tools for Teens with a group of adolescents with mental health issues, who were not currently receiving occupational therapy services.

diets, sleepy teens,

SETTING

The Tools for Teens program was used at a residential treatment center (RTC) that serves 11- to 18-year-old girls with varied diagnoses, including learning disabilities, Asperger syndrome, pervasive developmental disorder, bipolar disorder, oppositional defiant disorder,

- CATHY DORMAN
- LINDSEY NOWOTNY LEHSTEN
- MARY WOODIN
- RENEE L. COHEN
- JO A. SCHWEITZER
- JANICE TRIGILIO TONA

or borderline personality disorder, and histories including abuse, involvement in gangs and drugs, trauma such as grief and loss, prostitution, and school truancy.

The site offers 24-hour supervision, an on-campus school, foster care, a detention program, and communitybased services. It is based on a juvenile justice system model, rather than on a rehabilitative model. Therefore, it did not offer occupational therapy, physical therapy, or speech therapy for residents, though some residents had received these services prior to admission. The center was in the process of developing rehabilitation services, including occupational therapy, at the time the program was developed. The RTC could house up to 14 residents; when this program was implemented, there were 12 females ages 13 to 17 residing in two cottages of the RTC, with an average length of stay of 60 days.

PROGRAM DEVELOPMENT

In Phase I of the program development, the RTC staff identified the need to better understand and manage outbursts and other negative behaviors exhibited by the teens. After consulting with the occupational therapy students, staff members verbalized an interest in learning sensory-based techniques, and how understanding occupational therapy using an SI frame of reference could be used to meet the sensory needs of the residents. According to the director, upon admission each resident received a small "calming package" filled by staff with items such as squeeze balls, scents, lotion, and

stuffed animals. Although the girls did not receive guidance on how to use them, these items were quite popular.

In Phase II of the needs assessment, a survey was distributed to six of the teens, who all resided in the same cottage, to learn about their occupational interests. The survey asked the teens to indicate the skills they thought were

important by selecting from a list of seven skills, including obtaining employment and developing leisure skills. The survey also asked the teens to select activities of interest from a list of 20 choices, including relaxation/stress management, healthy cooking, and Internet security. A small focus group was held following the survey, and the adolescents repeatedly indicated that they did not know how to handle

anger or how to calm themselves in an acceptable manner, resulting in fighting and destroying property when feeling conflicted, and biting their nails when anxious.

PROGRAM GOALS AND OBJECTIVES

As a result of the Phase I needs assessment, which indicated that staff were interested in increasing their understanding of sensory issues, programming goals for staff focused on identifying the teens' sensory needs and providing appropriate activities to meet those needs. As a result of the Phase II needs assessment, which indicated difficulty with self-calming and managing anxiety, programming goals for residents focused on occupational engagement, appropriately incorporating sensory-based strategies, and demonstrating effective interpersonal communication skills to help the teens safely interact within their environment. Sensory strategies included actively participating in and exploring a variety of sensory stimuli and techniques (e.g., ball, tactile, deep pressure, relaxation, calming, and proprioceptive activities). Occupational engagement included creating a sensory-safe space by having the

residents help construct equipment for sensory activities (weighted blankets, animals, and shoulder/lap snakes). The items were kept in a sensory box in the lounge area of the cottage, and the residents were permitted to use the items in this "sensory safe" area. Interpersonal skills included developing the ability to self-identify times to use the information would play an important role in developing a sensory-safe space for the teens. The occupational therapy students used a visual cue board to present icons for each of the five senses as they facilitated a group discussion. Then the two unconscious senses (proprioception and vestibular) were taught in a very basic manner

Occupational engagement included creating a sensory-safe space by having the residents help construct equipment for sensory activities. The items were kept in a sensory box in the lounge area of the cottage, and the residents were permitted to use the items in this "sensory safe" area.

Interpersonal skills included developing the ability to self-identify times to use the sensory-safe space to meet internal sensory needs, and communicating these needs with staff in an appropriate manner.

the sensory-safe space to meet internal sensory needs, and communicating these needs with staff in an appropriate manner.

PROGRAM DESCRIPTION

After completing the needs assessments, the occupational therapy students instituted the group program, which consisted of three sessions, each of which was 1 ½ to 2 hours long. Through the program the teens helped develop the sensory equipment and identified two appropriate uses for each item. The staff members were provided with handouts and reliable Web site resources to obtain accurate information regarding sensory processing and activities.

INTERVENTION SESSION 1: MAKING SENSE OF THE SENSES

The purpose of first session was to educate the residents about their bodies with regard to sensation and nutrition, and to administer the Adolescent/Adult Sensory Profile⁸ for baseline data. The session began with an introduction of the occupational therapy student leaders and group members, an overview of the purpose of the session, and an explanation of how (e.g., proprioception was referred to as sensation from muscles and joints, and vestibular was referred to as movement). Examples were used to further explain how these senses affect one's daily life and interaction with the environment.

The sensory needs of one's body were discussed, in addition to how these needs affect our daily activities and behavior. The leaders introduced the concept of sensory diets, emphasizing that each person has unique sensory preferences and needs so the sensory strategies presented would affect each person differently. The group was provided with real-life situations about how to address individual sensory preferences or needs, such as taking a walk when feeling the need to move around, using chewing gum or licorice sticks as alternatives to nail biting when anxious, and taking deep breaths when feeling anger building. The adolescents were introduced to the rules of the sensory equipment provided by the occupational therapy students (see Figure 1 on p. 19) and had the opportunity to experiment with each piece while receiving basic information about its effects on the nervous system. This was followed by a

Figure 1. Sensory Box Rules and Equipment

Rules for the Sensory Box

- Please take care of the items inside the box...you helped to make these items...be PROUD of them.
- The sensory box is only to be used with permission from a staff member.
- After using the items, put them back in the box neatly.... They do not go into your room.
- If an item is broken, please give it to a staff member.
- Share the items with other girls.
- Enjoy!

Equipment for the Sensory Box Weighted Deep Pressure/Calming Equipment

- Weighted Blanket: The blanket provides deep pressure to the overall surface of the body. This extra pressure helps to calm and organize you when you are feeling anxious or upset. The blankets are washable, but be sure to remove the bean bags before washing.
- 2. Weighted animals, lap/shoulder snakes: The items provide you with extra weight and deep pressure to help calm and organize yourself when you are stressed out or upset.
- Spandex Hugs: This is wrapped around your shoulders, then you pull the ends tightly around yourself. It provides deep pressure to the shoulders which helps to calm and organize you. The spandex hugs are washable.

4. Large Ball: The ball can be used to sit on, bounce on, or roll over the body. The ball provides pressure to the body which helps to calm and organize you when you feel anxious or stressed out.

★ + ☆ + ☆

5. **Music Maker:** The music maker has a variety of soothing sounds. It can be plugged in or battery operated. The music helps provide a soothing feeling to help and focus you during times of a lot of stress or when you need to pay attention.

Tactile (touch) Equipment

- 1. **Shaving Cream:** Be creative! Use shaving cream on a table or floor and draw or write in it. This is an easy and fun way for self expression. It also helps to relieve anxiety.
- Flarp: Flarp can also be calming or it can help "wake you up." It has a sticky and cool texture and can be squeezed or stretched.
- Silly Putty: Silly Putty is another fun way to de-stress by pulling, squeezing, or stretching it. It provides input to your joints, which can be calming or stimulating. You can also use this to make objects or to write your name.
- 4. Sensory Ball: A sensory ball can be used as a fidget tool. You can pull on the ends, squeeze it, or run it up and down your arms and legs. This can also be used to help you relax when you're feeling anxious.
- Rice and Bean/Cornmeal Container: Running a mixture of rice, beans, and cornmeal over your hands is a way to relax. Be creative and add objects to

the mix, then try to guess what they are without looking.

 Moon Sand: Moon sand can be a calming and relaxing activity that also allows self-expression. This sand never dries out and you can make whatever you like time and time again. It is moldable and a great way to relieve stress.

Oral-Motor Equipment

- Hard Candy/Licorice/Gum/Pretzels: Sucking on hard candy, eating licorice sticks, chewing gum, or eating pretzels are good ways to satisfy your oral-motor needs. These activities also provide input to your muscles and can wake you up if you're feeling tired.
- Bubbles: Blowing bubbles and/or using the scented bubbles if you like to smell objects can provide sensation to your mouth, instead on chewing on pens or your nails.

Scented Equipment

- Lavender Air Freshener: Many people find lavender to be relaxing. If you are feeling agitated, try opening the solid lavender air freshener and putting it near the area where you are sitting.
- Lavender lotion: Spreading lavender lotion on your body can help calm you through your senses of smell and touch. Squeeze a little lotion between your hands and warm it up before you spread it on your arms and legs. You might find it more relaxing if you use firm, slow movements when you rub it in.

group discussion regarding the sensory equipment and how it affected each group member individually.

INTERVENTION SESSION 2: MAKING GEAR FOR THE SENSES

The purpose of this session was for the residents to construct two weighted blankets, five weighted stuffed animals, and two weighted shoulder/lap snakes. They also participated in a group discussion on the purpose and use of the crafted sensory equipment.

Calming music was played as the girls were divided into two groups of three to work on separate aspects of the weighted tie blankets. One group was given two pieces of fleece, each about the size of a twin bed sheet, with Velcro-closing pockets ironed onto one piece. These residents began by pinning the two pieces of material together and cutting fringe along the entire perimeter of both pieces. They then tied knots in the fringe to connect the two pieces. The second group remained seated at the table and measured ½ cups of dry beans into zipper plastic bags to be used inside the pockets as weights for the blankets. After the first weighted blanket was completed, the groups exchanged responsibilities and made a second one. They then had the option of removing stuffing from small precut stuffed animals, or using socks to make shoulder/lap snakes. The empty stuffed animals or socks were then filled with beans, poly beads, or both, and the residents sewed the animals and shoulder/lap snakes with assistance as needed from the occupational therapy students. Licorice sticks, hard candy, pretzels, and a cup of soda were provided with a brief explanation about how these items could help meet the teens oral-motor needs.

After cleanup, the teens were provided with an overview of the next session so they could anticipate the interaction. The occupational therapy students accounted for all scissors and needles before exiting the facility.

INTERVENTION SESSION 3: MAKING THE MOST OF THE SENSES

The purpose of this final session was to ensure that the teens and staff understood the contents of the sensory box, provide them with information on ways to expand the sensory-safe place, and evaluate the teens' and staff members' perceptions of and satisfaction with the program.

Each group member received a folder that contained information and pictures of the equipment in the sensory box and possible uses and benefits of each (see Figure 1), along with an individual plan with suggestions of ways to use the equipment to meet their sensory needs, based on the results of the Adolescent/Adult Sensory Profile completed in intervention session one. The staff members also received folders containing specific information regarding the use and benefits of each piece of equipment in the sensory box, along with an inventory list for the box and a therapy catalog to purchase specific equipment if desired.

Following a brief overview of the session, the residents were provided with lollipops (if desired) to address their oral-motor needs. The occupational therapy students reviewed each

FOR MORE INFORMATION

AOTA Fact Sheet: Addressing Sensory Integration Across the Lifespan Through Occupational Therapy

www.aota.org/Practitioners/SIS/SISs/SISIS/ Fact-Sheet.aspx

American Journal of Occupational Therapy. March/April 2007

Special issue on sensory integration. \$29.50 for members, \$39.50 for nonmembers. To order, call toll free 877-404-AOTA or shop online at http://store.aota.org.

Frequently Asked Questions About Ayres Sensory Integration® www.aota.org/Practitioners/PracticeAreas/ Pediatrics/Ayres-SI.aspx

piece of sensory equipment (see Figure 1) with a brief explanation of possible uses and received input from group members on how they felt the equipment would be beneficial to them. Each piece of equipment was passed around the room for each group member to explore.

Interestingly, the director and executive director of the center happened to observe the latter part of this session, which provided an opportunity for the residents to demonstrate their handmade sensory projects and their knowledge of sensory processing. The teens were quite animated as they showed the administrators what they had made and how each piece of equipment would help. They were able to explain, for example, the use of a weighted blanket and the spandex hug when they were feeling anxious and needed to calm down; they also explained the use of the other items. They were able to explain the rules of the sensory box and the need for the inventory list. This was quite exciting because many of the items had been discussed in previous sessions but not yet reviewed, yet the residents had still retained the information and were able to apply it. The administrators verbalized how impressed they were in the girls' ability to identify and address their needs, and their overall excitement and engagement in the session. The teens were simply smiling from ear to ear and were ecstatic with having the sensory box to use when they felt the need. One resident even showed the list of equipment to her grand-

Living Sensationally: Understanding Your Senses

By W. Dunn, 2008. (\$23.95 for members, \$34 for nonmembers. To order, call toll free 877-404-AOTA or shop online at http://store.aota.org. Order #1428. Promo code MI)

AOTA's Sensory Integration Special Interest Section

www.aota.org/Practitioners/SIS/SISs/SISIS.aspx

For many more resources and products, go to AOTA's Web site at www.aota.org

CONNECTIONS

Discuss this and other articles on the OT Practice Magazine public forum at **www.OTConnections.org.**

mother, who then purchased it for her to use individually and to keep after leaving the RTC. Following this last session, completed surveys were collected from the staff and residents. The surveys revealed that they all thought the equipment was useful, with all participants indicating "agree" or "strongly agree" on all statements.

PUTTING IT ALL TOGETHER

Overall, the goals for this program were met, in that the teens learned about their own sensory needs, identified ways to meet those needs, participated in constructing sensory equipment to do so, and learned how to advocate for themselves using appropriate interpersonal skills. The staff were educated on the SI frame of reference and demonstrated an appreciation for the use of sensory-based strategies to decrease behavioral outbursts. Unfortunately, this was a short-term program, and no objective follow-up data were collected. However, this program could be replicated in other RTCs as part of an experimental or quasi experimental research study to determine the effectiveness of Tools for Teens. For example, measuring the frequency of outbursts for a period of time before and after introducing the sensory box, and repeating the Adolescent/Adult Sensory Profile after implementing the sensory box would help determine the efficacy of this intervention. By educating teens about the sensory aspects of their bodies, the Tools for Teens program promotes independence and adaptation during a time of rapid change.

By educating teens about the sensory aspects of their bodies, the Tools for Teens program promotes independence and adaptation during a time of rapid change.

References

- Watling, R., Bodison, S., Henry, D. A., & Miller-Kuhaneck, H. (2006, December). Sensory integration: It's not just for children. Sensory Integration Special Interest Section Quarterly, 29(4), 1–4.
- Zuckerman, M. (1994). Behavioral expressions and biosocial bases of sensation seeking. New York: Cambridge University Press.
- Law, M. (2000). Evidence-based practice: What can it mean for me? OT Practice, 5(17), 16–18.
- Sackett, D. L., Richardson, W. S., Rosenberg, W. M., & Haynes, B. R. (1997). *Evidence-based medicine: How to practice and teach EBM*. New York: Churchill Livingstone.
- 5. Sabarre, C. (2007). Current evidence suggests that sensory integration (SI) treatment interventions are as effective as other forms of therapy in behavioural outcomes for youth and young adults with early psychosis. *Critically Appraised Topics (CATS): McMaster University and the University of British Columbia.* Retrieved July 26, 2009, from http://www.mrsc.ubc.ca/images/Sabarre-Cheryl_CAT.pdf
- Reisman, J. E., & Blakeney, A. B. (1991). Exploring sensory integrative treatment in chronic

schizophrenia. Occupational Therapy in Mental Health, 11(1), 25-43.

- Lindley, F., & McDaniel, M. (2005, January). Using a sensory room as an adjunct therapeutic modality in an adolescent residential treatment center: An outcome study. Tucson, AZ: Presentation at The National Association of Therapeutic Schools and Programs 2005 Annual Conference.
- Brown, C., & Dunn, W. (2002). Adolescent/Adult Sensory Profile manual. San Antonio, TX: Psychological Corporation.
- Henry, D. (2004). Sensory integration tools for teens: Strategies to promote sensory processing. Glendale, AZ: Henry OT Services.
- Henry, D. (2007). Tools for tots: Sensory strategies for toddlers & preschoolers. Glendale, AZ: Henry OT Services.
- Henry, D. (2003). Tools for teachers: Sensory integration in the schools (DVD). Glendale, AZ: Henry OT Services.

Cathy Dorman, MS, OTR, is an independent contractor providing early intervention and preschool services in Chautauqua County in New York State. She also provides pediatric services through Buffalo Hearing and Speech, and provides home care services through the Visiting Nursing Association of Western New York. At the time of this project she was a graduate student in the BS/MS OT program at the University at Buffalo and was a practicing COTA.

Lindsey Nowotny Lehsten, MS, OTR, is an occupational therapist at Baker Victory Services in Buffalo, NY. At the time of this project she was a graduate student in the BS/MS OT program at the University at Buffalo.

Mary Woodin, MS, OTR, is an occupational therapist at Northeast Rehabilitation Hospital in Salem, New Hampshire. At the time of this project she was a graduate student in the BS/MS OT program at the University at Buffalo.

Renee L. Cohen, MS, OTR, is an occupational therapist at Staten Island University Hospital. At the time of this project she was a student in the BS/MS OT program at the University at Buffalo.

Jo A. Schweitzer, MS, OTR, is a clinical assistant professor and OT academic fieldwork coordinator in the Department of Rehabilitation Science at the University at Buffalo. She was the faculty advisor for this student project.

Janice Trigilio Tona, PhD, OTR, is a clinical assistant professor in the Department of Rehabilitation Science at the University at Buffalo.

Stay up-to-date on one of the most important health care subjects today!

SENSORY INTEGRATION



Charlotte & Bryten, Phil, OTK, FADER, and Annes). Lookborn, LED, OTK, FADER



SENSORY INTEGRATION A Compendium of Leading Scholarship

Edited by Charlotte B. Royeen, PhD, OTR, FAOTA, and Aimee J. Luebben, EdD, OTR, FAOTA

As sensory integration becomes an area of rapidly increasing interest in the health care community, your scholarship on the subject is more important than ever. This exciting new book tackles every angle of sensory integration and provides you with a compendium of the latest sensory integration research, debates, and trends. It is ideal for occupational therapy practitioners, students, researchers, and health care professionals who seek to better understand this complex and fascinating field.

This compendium includes 45 recently published articles from a wide range of sources. For each article, an extensive annotation provides an in-depth description of the topic or study, a summary of outcomes and conclusions to be drawn from it, and an explanation on how to apply these conclusions to practice and research. Six sections tackle every angle of sensory integration, including definitions, diagnosis, assessment, intervention effectiveness, research creation, and living with a sensory integration disorder.

3K-126

Shop AOTA today! Call 877-404-AOTA Shop online at http://store.aota.org