SIS Quarterly Practice Connections

A Supplement to *OT Practice*®

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Table of Contents

Environmental/Contextual Factors

According to the American Occupational Therapy Association's (2017) *Vision 2025*, "occupational therapy maximizes health, well-being, and quality of life for all people, populations, and communities through effective solutions that facilitate participation in everyday living." Occupational therapy practitioners do this by considering each client's environmental and contextual factors, and how these relate to what the client wants and needs to do. This holistic perspective is reflected in adapting the environment to fit the person, and viewing the person as an integral part of the therapy team.

This issue of the *SIS Quarterly Practice Connections* highlights environmental and/or contextual factors to consider or address in treatment. A pdf of the entire issue is on AOTA's website (www.aota.org) in the Publications section, and the individual articles are posted in the section in which they appear in this issue.

What do you think? Please let us know at sis@aota.org or join the discussions on our new online platform, CommunOT™, at https://CommunOT.aota.org.

Andrew Persch, PhD, OTR/L, BCP
Special Interest Section Council Chairperson

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Special Interest Section Guide

- **AE** Academic Education
- **CY** Children & Youth
- **DD** Developmental Disabilities
- **HCH** Home & Community Health
- **MH** Mental Health
- **PA** Productive Aging
- **RD** Rehabilitation & Disability
- **SIP** Sensory Integration & Processing
- **WI** Work & Industry

Featured in this edition: Farewell messages from the CY, HCH, and MH Special Interest Section Chairpersons

2018 AOTA Specialty Conferences and Events

AOTA® The American Occupational Therapy Association, Inc.

Save the dates!

www.aota.org/conferences

Specialty Conference:
Children & Youth

September 28–29, 2018
(Pre-Conference sessions on September 27th)
Milwaukee, Wisconsin

2018 AOTA Education Summit

October 13–14, 2018
Louisville, Kentucky

AOTA/NBCOT National Student Conclave

November 9–10, 2018
Atlantic City, New Jersey

Specialty Conference:
Adult Rehabilitation

November 30–December 1, 2018
(Pre-Conference sessions on November 29th)
Los Angeles, California

SIS-179

- Send comments or submissions to sis@aota.org.
- For more information on the Special Interest Sections, visit www.aota.org/sis.

Mission Statement

The *SIS Quarterly Practice Connections* focuses on the role and application of research and other evidence to occupation-centered practice in areas of interest to members. It reflects the applicability and value of collaboration across specialty areas and settings.

AOTA® The American Occupational Therapy Association, Inc.

AOTA Elections

AOTA will be taking nominations for elections in the Fall. The Special Interest Section committees up for nomination are Academic Education, Productive Aging, and Rehabilitation & Disability. For more information visit www.aota.org/aboutaota/get-involved/elections.aspx.

Join the Discussion on AOTA's New Online Community

AOTA is pleased to announce the June 12 launch of CommunOT™, where AOTA members can interact, engage, and share to build a professional online community. This is a place to ask occupational therapy questions, share ideas, and respond to others. Join the discussion at https://CommunOT.aota.org.

AJOT Seeking Authors for Health Policy Perspectives Column

Have a perspective on occupational therapy practice that relates to state, federal, or local policy? There is always an opportunity for thoughtful, referenced opinions for publication in the Health Policy Perspectives column in *AJOT*. It is a thought column to express views, calls to action for the profession, and give perspective on how occupational therapy and health care policy intersect or could intersect. No original research required; references to ongoing, unpublished research permitted. Editorial consultation and development assistance provided. If you have a topic or idea, contact Christina Metzler at cmetzler@aota.org.

AOTA Joins Choosing Wisely Campaign

Choosing Wisely®

An initiative of the ABIM Foundation

AOTA recently published "Five Things Patients and Providers Should Question" through the ABIM Foundation (American Board of Internal Medicine) Choosing Wisely® initiative. Choosing Wisely aims to promote meaningful conversations between practitioners and clients to ensure that appropriate and quality care is being provided. Specifically, the aims of this initiative are to ensure that interventions and assessments are supported by evidence, not duplicative of other tests or procedures already received, free from harm, and truly necessary.

The 5 recommendations are:

1 Don't provide intervention activities that are non-purposeful (e.g., cones, pegs, shoulder arc, arm bike).

Purposeful activities—tasks that are part of daily routines and hold meaning, relevance, and perceived utility such as personal care, home management, school, and work—are a core premise of occupational therapy. Research shows that using purposeful activity (occupation) in interventions is an intrinsic motivator for patients. Such activities can increase attention, endurance, motor performance, pain tolerance, and engagement, resulting in better patient outcomes. Purposeful activities build on a person's ability and lead to achievement of personal and functional goals. Conversely, non-purposeful activities do not stimulate interest or motivation, resulting in reduced patient participation and suboptimal outcomes.

2 Don't provide sensory-based interventions to individual children or youth without documented assessment results of difficulties processing or integrating sensory information.

Many children and youth are affected by challenges in processing and integrating sensations that negatively affect their ability to participate in meaningful and valued occupations. Processing and integrating sensations are complex and result in individualized patterns of dysfunction that must be addressed in personalized ways. Interventions that do not target the documented patterns of dysfunction can produce ineffective or negative results. Therefore, it is imperative to assess and document specific sensory difficulties before providing sensory-based interventions such as Ayres Sensory Integration®, weighted vests, listening programs, or sensory diets.

3 Don't use physical agent modalities (PAMs) without providing purposeful and occupation-based intervention activities.

The exclusive use of PAMs (e.g., superficial thermal agents, deep thermal agents, electrotherapeutic agents, mechanical devices) as a therapeutic intervention without direct application to occupational performance is not considered occupational therapy. PAMs provided with a functional component can lead to more positive health outcomes. PAMs should be integrated into a broader occupational therapy program and intervention plan in preparation for or concurrently with purposeful activities or interventions that ultimately enhance engagement in occupation.

4 Don't use pulleys for individuals with a hemiplegic shoulder.

Use of an overhead pulley for individuals with a hemiplegic shoulder resulting from a stroke or other clinical condition is considered too aggressive and should be avoided, as it presents the highest risk of the patient developing shoulder pain. Gentler and controlled range of motion exercises and activities are preferred.

5 Don't provide cognitive-based interventions (e.g., paper-and-pencil tasks, table-top tasks, cognitive training software) without direct application to occupational performance.

To improve occupational performance, cognitive-based interventions should be embedded in an occupation relevant to the patient. Examples of cognitive-based interventions include awareness approaches, strategy training, task training, environmental modifications, and assistive technology. The use of cognitive-based interventions not based on occupational performance will result in suboptimal patient outcomes.

These items are provided solely for informational purposes and are not intended as a substitute for consultation with a medical professional. Patients with any specific questions about the items on this list or their individual situation should consult their health care provider.

How This List Was Created

Led by Project Champion Glen Gillen, EdD, OTR, FAOTA, Associate Director and Professor of Rehabilitation and Regenerative Medicine (Occupational Therapy) at Columbia University Medical Center, the American Occupational Therapy Association (AOTA) conducted a three-phase project to develop the final Choosing Wisely recommendations of services that occupational therapy practitioners should not provide. The phases of the project included Phase I—building member awareness and support, Phase II—soliciting member input, and Phase III—dissemination of the final items. Phase I was accomplished through presentations to AOTA member and volunteer groups, a Town Hall session at AOTA Annual Conference, an online webinar and related materials, and coverage in AOTA publications. Phase I was completed with an online member survey that resulted in 328 responses. Following the elimination of duplicate responses and items outside the scope of occupational therapy practice, the list was narrowed down to 62 items. Additional input was received from AOTA Special Interest Section volunteer leaders to rank the items based on established criteria. An extensive literature search was conducted on the highest ranked strategies. Phase II involved an online member survey presenting 12 items for evaluation with a goal of picking the top 5. This survey resulted in 4,860 responses that were analyzed, resulting in the final 5 items. These items were reviewed by the AOTA Board of Directors. Phase III included the development of a communication and dissemination plan.

AOTA's disclosure and conflict of interest policy can be found at www.aota.org.

AOTA is committed to helping OT practitioners implement the recommendations in practice and to facilitating ongoing dialogue about the campaign. All related information and opportunities about the campaign will be posted on the AOTA website at http://www.aota.org/Practice/Researchers/choosing-wisely.aspx.

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Implementing Contextually Based Services: Where Do We Begin?

CY **Francine M. Seruya, PhD, OTR/L; and Mindy Garfinkel, OTD, OTR/L, ATP**

School-based intervention is most effective when it is contextually based and integrated within the student's natural settings (Handley-More et al., 2013; Polichino & Jackson, 2014). When practitioners implement service delivery models that are integrated and contextually based in the natural and least restrictive environment (LRE), they support legislative mandates (Individuals with Disabilities Education Improvement Act [IDEA], 2004) and guidelines for best practice (American Occupational Therapy Association [AOTA], 2014; Handley-More et al., 2013). Providing services within natural settings allows for increased collaboration with other team members, thereby facilitating child-centered, occupation-based evaluation and intervention (Handley-More et al., 2013; Polichino & Jackson, 2014).

Providing services within the environment where a student is expected to perform also increases the likelihood that learned skills will be generalized (Watt & Gage Richards, 2016). To support generalization, practitioners must consider all environmental contexts a student encounters in a typical day. Occupations within the school setting encompass not only academic tasks, but also the social aspects. Students must be able to interact with peers in various settings such as the lunch room and the bus (AOTA, 2017).

Despite legal mandates for service delivery in the LRE (IDEA), and evidence demonstrating the benefits of contextually based practice, many occupational therapy practitioners continue to provide services outside the classroom or other natural settings (Seruya & Garfinkel, 2018). These practitioners typically create schedules based on frequencies and group size indicated in the Individualized Education Plan (IEP) that are provided primarily in separate settings (Rodrigues & Seruya, 2017; Spencer et al., 2006).

Practitioners report time constraints, lack of administrative support, and high caseloads as barriers to implementing contextually based practice (Garfinkel & Seruya, 2018). However, providing contextually based services may allow practitioners to reframe a caseload model of service delivery to a workload model (Garfinkel & Seruya, 2017). Practitioners can model modifications, accommodations, and interventions to facilitate carry over by classroom staff (Silverman, 2011). Additionally by learning the classroom curriculum and routines, practitioners can develop more effective interventions (Bazyk & Cahill, 2014) in the LRE.

The ability to develop an integrated service delivery model depends in part on effective collaboration and planning between teachers and practitioners (Casillas, 2010). Studies exploring collaboration have indicated teachers would like practitioners to engage in reciprocal and planned communication to facilitate sharing ideas

and better understanding the students through shared points of view (Casillas, 2010; Seruya et al., 2015, 2016). Integrated services allow teachers to directly observe interventions, thus increasing their understanding of the occupational therapy scope of practice and helping them to more readily implement practitioners' suggestions (Casillas, 2010; Seruya et al., 2015).

The Contextually Based and Integrated Service (CBIS) Model was developed by the authors to create a systematic means to effectively collaborate and implement services in students' natural, least restrictive settings. It offers practical steps for practitioners to consider when providing contextually based services (see Figure 1).

Case Example: Craig

Craig is an occupational therapist (OT) in an elementary school who wants to provide contextually based services, but he doesn't know where to begin. He uses the CBIS Model to get started.

Information Exchange: For the past 4 weeks, Craig has worked with Daniel, a third-grader with dyslexia and developmental coordination disorder. Craig told Ms. Lewis, Daniel's teacher, that Daniel's occupational therapy evaluation showed Daniel had difficulty visually following a line of print; Craig had been using a colored index card during his occupational therapy sessions to help Daniel follow along in a book. Craig added he had been highlighting spaces on worksheets to help Daniel adjust the size and spacing of his responses, another area identified through the evaluation to be challenging for Daniel. Craig indicated that Daniel was independent using these strategies when he came to the occupational therapy room, and asked Ms. Lewis if Daniel had been using these strategies in class. Ms. Lewis reported he was not. Clearly, Daniel was not generalizing the skills acquired outside of the classroom into his natural environment.

Explore Context: Craig used the Person–Environment–Occupation Model (Law et al., 1996) to guide his practice. He observed Daniel several times in the classroom and computer lab, noting behavior and function skills. When the teacher asked for volunteers to read, Daniel avoided eye contact. He would not allow anyone to see his written work. Daniel did not use the strategies he had been taught in the therapy room. In the computer lab, Daniel was able to use a mouse effectively; however, he typed very slowly, with multiple errors.

Problem Solve and Plan: Craig shared his observations with Ms. Lewis, and suggested he begin working with Daniel in the classroom to help with skill generalization, addressing challenges Daniel faced when they occurred naturally. Ms. Lewis was worried that Craig's presence might distract the other students. Craig understood her concern; however, he indicated that he would also be able to collaborate with her to help other students with challenges while in the classroom. Ms. Lewis liked the idea, and Craig rearranged his schedule.

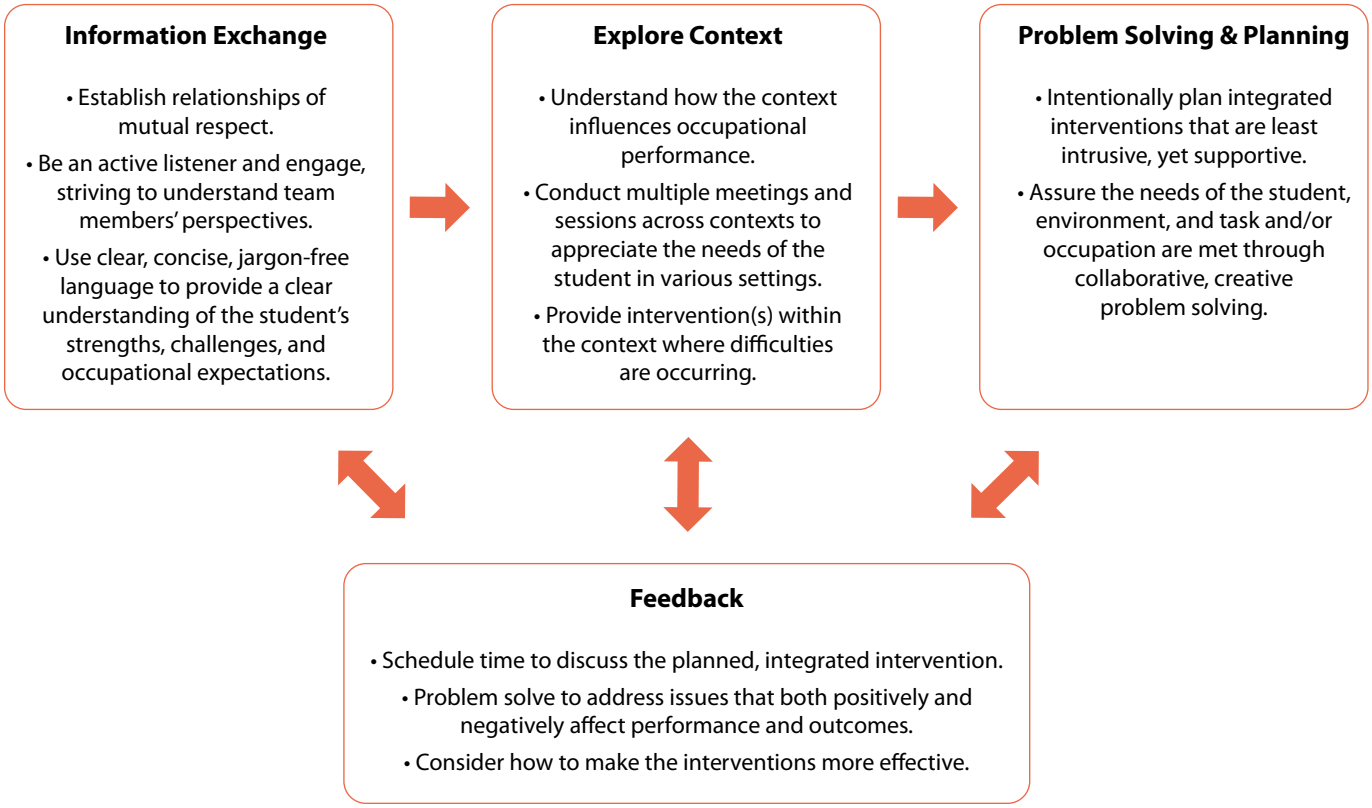
Ongoing Feedback: At the next meeting, they discussed feedback on the integrated service delivery model. Craig reported he had learned a lot about the pace of instruction and demands of the curriculum in the classroom. As a result, he decided to introduce text-to-speech and speech-to-text software in the computer lab; this was also installed on a laptop for Daniel's use in the classroom. Ms. Lewis said Daniel was more available for learning, and he liked using the technology in the classroom. Several other students started using it as well.

Ms. Lewis reported that not only had Craig offered solutions to help Daniel access the curriculum, but she was able to collaborate with Daniel in "real time" while he was in the classroom.

Case Example: Allison

Allison is an OT working in a Life Skills Program in a high school. She wanted to implement the CBIS Model but was challenged by scheduling and teacher apprehension.

Figure 1. The Contextually Based and Integrated Service Model



Information Exchange: Allison approached Barbara, the Life Skills Program teacher, and shared her idea to implement a CBIS delivery model. Barbara stated she was uncertain what that would look like and how it would benefit the students on Allison's caseload. She also wasn't sure how this approach would meet the IEP service mandates. Barbara thought Allison would distract the other children. Allison explained she would still provide occupational therapy services but she would do so by working with Barbara in class to facilitate learning, while working toward attaining mutual IEP goals. Allison discussed ways to develop lesson plans collaboratively and augment lessons to incorporate both of their areas of professional expertise.

Explore Context: Allison came to class and observed the Job Skills Block. She used the *Occupational Therapy Practice Framework: Domain and Process* (3rd ed.; *Framework*; AOTA, 2014) to guide her observations, particularly contexts and performance skills. Allison noted that while Barbara was teaching, many of the students lost their place, needed more assistance, and raised their hand to ask questions, which distracted Barbara from the lesson. Allison used activity analysis to notice places in the lesson where accommodations could be provided, such as breaking skills into smaller components and using visuals.

Problem Solve and Plan: After the lesson, Allison shared her observations with Barbara. She suggested providing a visual schedule of the lesson to help students stay on track, additional visual aids for the sorting task Barbara had demonstrated, and ways to break the task into smaller components. Barbara liked the ideas and was willing to try them during the next class. They agreed to collaborate to plan the next lesson and to take turns providing class instruction and individual support.

Ongoing Feedback: After the lesson, Barbara shared that she was surprised the students were not distracted by Allison, and that they benefited from her suggestions. Barbara appreciated Allison's willingness to both lead and provide individual student support. Barbara confirmed her interest in continuing to work with Allison during the Job Skills Block and invited her to collaborate on the lesson plan for the Cooking Block.

Conclusion

While simplified, these case examples explored the ability to implement contextually based, integrated services in a school setting where this model does not already exist. Combining occupation-based models, the *Framework*, activity analysis, and the CBIS Model, has led to positive outcomes for students and teachers. Providing contextualized services allows practitioners to work with students in their natural settings to successfully complete the occupational tasks inherent throughout the school day.

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About the Children & Youth SIS

The Children & Youth (formerly Early Intervention & School) Special Interest Section (CYSIS) provides resources to support the practice, leadership, and advancement of practitioners serving youth, families, and teams in early intervention and school programs. It promotes the meaningful participation of youth and families in their everyday lives where they live, learn, and play.

- Meet the CYSIS committee members at www.aota.org/CYSIS.
- Join the CommunOT™ discussion at www.aota.org/CYSIS-forum.

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Francine Seruya, PhD, OTR/L, is a School-Based Therapist in Westchester County, New York, and Program Director and Professor of Occupational Therapy at Mercy College in New York. She can be reached at FSeruya@mercy.edu.

Mindy Garfinkel, OTD, OTR/L, ATP, is a School-Based Occupational Therapist in Williston Park, New York, and a part-time faculty member in the Post-Professional Doctoral Program at Quinnipiac University in Hamden, Connecticut.

Farewell From the CYSIS Chairperson

Patricia Laverdure, OTD, OTR/L, BCP

It has been an honor to serve as Chairperson of the Children & Youth (formerly Early Intervention & School) Special Interest Section (SIS) over the past 3 years! I am indebted to the passionate commitment and leadership of the SIS Standing Committee. Joanna Cosbey, PhD, OTR/L, Education and Research Coordinator, worked tirelessly to collect data, evaluate trends in practice, and bring creative ideas to translate evidence to practice to the committee and members. Francine Seruya, PhD, OTR/L, *Quarterly* Editor, gracefully navigated the newsletter transition and skillfully cultivated authors through the publication of their innovative practice ideas. Pam Stephenson, OTD, MS, OTR/L, Communications Coordinator, led our members in relevant and stimulating conversations on OT Connections and in publications and workshops, challenging us to critically examine our practice and consider the evidence in our decision making. And our newest member, Mindy Garfinkel, OTD, OTR/L, ATP, Technology Coordinator, examined the intersection of technology and practice and guided the efforts of the committee in using technology to advance occupational therapy outcomes. Their knowledge and tenacious dedication to children, families, and teams, and their stewardship of our profession is extraordinary. For their leadership, I am grateful.

As the SIS approaches its 25th anniversary, I am reminded of the work of the committees before us. From 1994 to 2009, the School SIS focused on strengthening the evidence and building a network of leaders and resources to shape effective practice. In 2009, we became the Early Intervention & School SIS and strengthened our collaboration with service providers across the continuum of care under IDEA. Today, we continue to reinforce connections and collaborations across the age span from infancy through transition to adulthood and across practice settings, and we are broadened even further when we became the Children & Youth SIS in November. Together, as a practice community, we will be most effective in identifying and translating the evidence to inform our practice, design practice models and research that validate our evaluation and interventions, and effectively advocate for our efficacy and value. I pass the baton with great anticipation and confidence to the incoming Chairperson, Pam Stephenson, whom I know will lead our practice further forward!

Evidence Supports Sensory Techniques and Environmental Modifications

A review of recent research delves into the effectiveness of specific sensory techniques and sensory environmental modifications (https://bit.ly/2IBgYDX). To find out more and learn about key evidence recommendations to guide and justify services for children and youth with sensory processing and sensory integration deficits, check out the 2018 AOTA *Practice Guidelines for Children and Youth With Challenges in Sensory Integration and Sensory Processing* at https://bit.ly/2GFjGCM.

Sponsored in part by Bay Path University

The Dynamic Process of Occupational Therapy: Moving Learning From the Classroom to the Client

AE Judith Ismail, DHSc, OTR/L; and Laura Miear, MS, OTR/L

In occupational therapy education programs, client simulation provides the opportunity for students to apply what they have learned in the classroom and demonstrate competency in developing the occupational profile, selecting specific assessments and interpreting the findings, and creating goals in collaboration with the simulated client. Sometimes this client is an occupational therapy instructor in the role of the client. It may also be a standardized patient, which is someone who has been trained to take on the physical and cognitive characteristics of a patient with a particular condition. The standardized patient encounter allows the student to be evaluated on clinical skills and demonstrate competency in a simulated and safe environment (Weaver & Erby, 2012).

In collaboration with standardized patients, occupational therapy educators can use experiential learning as an active form of learning to capture a student's interest and attention in a specific topic. Learning situations outside of the classroom and within the community can be designed so that attention is focused on a specific concept, thereby encouraging each student to deeply engage in the learning experience (Kolb, 2015). When the occupational therapy instructor uses methods based on experiential learning theory to teach the occupational therapy process, he or she is giving each student the opportunity to engage in a meaningful and dynamic style of learning. Two occupational therapy faculty (the authors) applied concepts from experiential learning theory to develop a practical, memorable, and dynamic activity that challenged students to apply concepts and skills learned in the classroom to a real client with a cervical spinal cord injury (SCI), "Billy," by going to his home to practice the initial steps of the occupational therapy process (American Occupational Therapy Association [AOTA], 2014).

Learning About Occupational Therapy in the Home

The first step in creating this learning experience was to contact an individual in the community, Billy, who had previously been involved with the occupational therapy program as a guest speaker. His past experiences in occupational therapy were positive, and he was enthusiastic about participating. Billy was asked to prepare a list of objectives that he believed the occupational therapy students should meet at the end of the experience. He was an expert on the topic of SCI, so the university hired him as a part-time, standardized patient. The faculty then worked out the logistics of the student visits to Billy's home and created corresponding assignments and learning activities. These assignments were part of a 3-credit-hour course that

met twice a week for 90 minutes. The faculty designed the assignments to provide an opportunity for the students to practice the skills of therapeutic use of self and cultural sensitivity. Additionally, the activity provided a personal and meaningful opportunity for students to gather information for the occupational profile (AOTA, 2014), and for each student to understand Billy's occupational experiences, barriers to his occupational performance, and his personal priorities. The other objectives for the assignments were to practice scoring the Functional Independence Measure (FIM; Uniform Data System for Medical Rehabilitation, 2009) and to develop an intervention plan.

The Client

Billy was a 50-year-old man who had sustained a C5–6 complete SCI in a motor vehicle accident 25 years earlier. He participated in rehabilitation after his injury and had not had therapy in more than 15 years. Billy and his wife lived in Southwest Virginia, a mountainous and mainly rural area with its culture closely associated with Appalachia. They had a modest home in the country that was custom built to be accessible for him. Billy used a universal cuff in his right hand, or he relied on his mouth to pick up objects. He used a power wheelchair and transferred with a mechanical lift. He demonstrated a high level of health literacy related to his condition.

Billy did not work. His wife worked full time outside the home, leaving Billy alone for most of the day. He had help in the morning and evening from a home-health agency for occupations such as meal preparation, bathing, dressing, and bowel and bladder management. Billy brushed his teeth with an electric toothbrush and u-cuff. He spent his day playing video games on his computer, surfing the Internet, or emailing friends. His wife prepared the evening meal.

Experiential Learning Activity

The faculty divided the assignment into two parts, requiring the students to visit Billy in his home on two separate occasions: gathering the occupational profile and measuring ADL performance. The 22 occupational therapy students were in their last semester of the Master of Occupational Therapy (MOT) program. They were divided into four groups of five to six and traveled to Billy's home, located approximately 10 minutes from the university campus. Billy asked that students come to his home in the afternoon to accommodate his daily routines. The students were informed ahead of time that Billy had two large dogs in the home, in case they had allergies or other concerns. For each part of the assignment, each instructor supervised two groups of students during a 60-minute visit on Monday and Wednesday afternoons, during the same week. The faculty encouraged Billy to take breaks during each occupational profile and FIM session to minimize fatigue.

Step 1: Gathering the Occupational Profile

The instructors developed a client profile for Billy, then they gave students access to pertinent medical information and instructed them to develop a list of questions to ask Billy during the interview. During the first 60-minute visit, the students applied learned concepts and skills as they gathered information for the occupational profile. By completing the occupational profile in Billy's home, the students learned to appreciate the contextual dimensions of his preferred occupations: assisting his wife with home management tasks, picking up items dropped on floor, shaving, brushing his dogs, pulling himself upright in his wheelchair, and gaining the confidence to find meaningful employment from home. The 60-minute visit plus travel time was equivalent to one class session for the week; students used the remaining 90 minutes of class time to analyze and synthesize the information gathered from the occupational profile.

Step 2: Measuring ADL Performance

Two weeks later, the students returned to Billy's home to complete the second 60-minute visit. Students remained in the same groups, with the same faculty supervisor. They were informed that this assignment would be in addition to classroom hours, and time spent would be counted toward laboratory hours for the course. The students observed and assisted Billy as he performed various ADLs. Billy walked the students through his morning routine and explained each step of his care. The students used the FIM to rate Billy's level of independence. With the guidance of the instructors, each student critically reflected on and synthesized what they observed to create an individualized intervention plan. In this home-health setting, the students were considered a member of the team as they worked alongside faculty. The faculty members were mentors to the students, and they tailored the field experience to what each student needed to learn. For example, students viewed by faculty as needing more practice in the therapeutic use of self were encouraged to lead the information gathering session. Other students who were hesitant to get physically close to Billy during role-play sessions were encouraged to perform simple hands-on tasks with him. Billy emphasized that it was important for occupational therapists to be open minded and unafraid of clients with SCIs. Billy asked the students to empty his leg bag and help him prepare his lunch, brush his teeth, and shave.

Step 3: Developing an Intervention Plan

The students identified current problems in Billy's occupational performance and the underlying reasons for each problem. Each student set goals and developed intervention ideas to address the goal areas. Based on feedback from the first group of students, during the second year of this assignment students were required to subscribe to Neehr Perfect (2015), an educational electronic health record (EHR), as part of the course materials. Students wrote the occupational profile and intervention plan directly into Billy's mock-EHR. During both years the instructors provided an optional opportunity for students to develop innovative adaptive equipment for Billy to promote his independence.

Student and Client Outcomes

Student Outcomes

The faculty adapted a survey from Knecht-Sabres (2010) for the students to explore the perceived benefits of this assignment (see Table 1 on page 10). Forty students on their first Level II fieldwork experience were asked to provide their thoughts on this assignment through an online anonymous feedback system. These students were

About the Academic Education SIS

The Academic Education (formerly Education) Special Interest Section (AESIS) members share a common interest in the field of occupational therapy education and include program directors, fieldwork educators, academic fieldwork coordinators, and faculty. The AESIS has a Fieldwork Subsection for fieldwork educators and academic fieldwork coordinators, and a Faculty Subsection. The AESIS strives to share current evidence-based teaching and learning tools and strategies in order to facilitate best practices in occupational therapy and occupational therapy assistant education.

- Meet the AESIS committee members at www.aota.org/AESIS.
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Table 1. Survey Results

Survey Questions	Student Responses		
Was there improvement in comfort and understanding of:	Yes	No	No Response
Interacting with clients.	100%		
Explaining the role of occupational therapy.	85.6%		14.3%
Obtaining the occupational profile.	100%		
Performing the Functional Independence Measure.	71.4%	14.3%	14.3%
Developing an occupation-based treatment plan.	71.4%		28.6%
Effect of the environment on client's performance.	100%		
Client's cultural background and need for therapeutic use of self.	85.7%		14.3%
Client's condition.	85.7%		14.3%
What it means for individual to have a spinal cord injury.	100%		
Practical issues affecting the clinical condition.	100%		
Evaluation data to explain why client is experiencing problems.	85.7%		14.3%
Effect of the client's occupational problems on his daily life.	100%		

selected to participate in the survey because they had worked with Billy while they were in their last semester of the MOT program. In general, the students reported that the assignment was one of the best they had in the program.

Client Outcomes

Billy received praise from the occupational therapy students for his willingness to help them learn. Billy reported a sense of pride and gratitude from being asked to prepare assignment objectives, and he felt as though he was part of the teaching team. Through therapeutic use of self, the students motivated Billy to attempt some activities for self-care and home management. Billy reported that after incorporating adaptive equipment fabricated by the students he could brush his dogs with a universal cuff attached to his dog brush, and cut food with an adapted cutting board and knife. He stated, "Thank you from the bottom of my heart for the help giving me more independence around the house." The following year some of the students created a strap so Billy could right himself when he fell to the side in his wheelchair and shave by himself using an adapted electric razor (see Figure 1). Billy received compensation at an hourly rate for the time spent with the students as a standardized patient. He stated that the financial gains from this experience were also very helpful to his family.

Figure 1. Billy Shaving With Adapted Razor

Conclusion

This experiential learning activity afforded the students an opportunity to exercise and grow in clinical reasoning skills, therapeutic use of self, and cultural competence—three aspects of clinical practice that are very difficult to nurture without true client/therapist interaction. There were other positive outcomes as well. Students had the opportunity to practice entering the occupational profile, evaluation findings, and intervention plan into an EHR. Students, faculty, and Billy reported very positive outcomes after participating in this experience. Faculty received positive feedback from both groups of students for providing them with this learning activity. The authors of this article recommend this instructional method to other occupational therapy faculty who wish to create opportunities for deeper student engagement and hands-on application for some of the more abstract content.

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Judith Ismail, DHSc, OTR/L, is an Assistant Professor in the Department of Occupational Therapy at Radford University in Radford, Virginia. She can be reached at Jmalekismail@radford.edu

Laura K. Miear, MS, OTR/L, is Special Purpose Faculty in the Department of Occupational Therapy at Radford University.

Occupational Therapists' Distinct Value in Creating a Sensory-Friendly Waiting Room

SIP

Eunice Y. Hong, OTD, OTR/L; Sharon A. Cermak, EdD, OTR/L, FAOTA; and Leah I. Stein Duker, PhD, OTR/L

Health care visits can be stressful for children and adults. Long waits, new and unfamiliar environments, meeting strangers, and uncertainty can all contribute to heightened fear and anxiety. Individuals with sensory processing challenges may face additional barriers from stimuli commonly found in health care environments, potentially leading to a cascade of negative responses including uncooperative behaviors, anxiety, and behavioral disorganization. Occupational therapists' (OTs') knowledge and expertise in sensory integration and universal design principles ideally position them to assume the role of developing health care waiting rooms that allow individuals with sensory processing difficulties to access their environment more effectively. Patient-centered care can and should start in the waiting room.

Although OTs can assess various components within the environment (e.g., physical accessibility, fall prevention, low vision) to increase participation and safety, this article focuses specifically on meeting patients' sensory needs. Sensory processing difficulties have been reported in several clinical populations including those with autism spectrum disorder (ASD; Baranek et al., 2006), attention deficit hyperactivity disorder (Ghanizadeh, 2011), and developmental delay (Baranek et al., 2006). Research has also found that about 12% of typically developing children may also experience sensory processing difficulties (Bar-Shalita & Cermak, 2016). Challenges with sensory processing, particularly sensory over-responsivity, have been found to be positively correlated with anxiety (Green et al., 2012; Uljarević et al., 2016). Feelings of anxiety have both psychological and physiological effects and can adversely interfere with optimal patient outcomes and patients well-being during health care encounters (HCEs; Biddiss et al., 2014).

The waiting room is often the first experience an individual has during HCEs. One's experience in the waiting room can serve as a precursor to a successful health care experience, with studies finding that the quality and appeal of the health care environment is positively correlated with level of satisfaction, perception of quality of care, and reduction in anxiety (Becker & Douglass, 2008).

The waiting room experience for individuals with sensory processing difficulties can be especially challenging. For example, anxiety may be heightened after exposure to loud noises, bright lights, walls cluttered with artwork or flyers, close proximity to and interactions with strangers, as well as uncomfortable seating options. Reducing the perceived noxious sensory stimuli in the waiting room has the potential to diminish anxiety and enhance the overall experience by

instilling a positive attitude about the upcoming appointment (Panda et al., 2015). Multiple studies have examined strategies to reduce anxiety for typically developing children and adults in health care waiting rooms, including music (Klassen et al., 2008), aromatherapy (Biddiss et al., 2014), natural lighting (Ulrich et al., 2008), and nature (e.g., plants, artwork; Ulrich et al., 2008).

OTs are uniquely qualified to assess the health care environment to adapt and structure its sensory features to facilitate an optimal arousal level and minimize potentially noxious stimuli. Occupational therapy practitioners can consult with health care professionals, designers, and architects, and provide a unique perspective in creating waiting spaces that fit the needs of all patients.

Various theoretical models can be used when considering adaptations to the environment. The principles of universal design (Center for Universal Design, 1997) emphasize the importance of creating environments that are accessible by all people to the fullest extent by addressing the wide range of potential needs and identifying and removing barriers. Strategies using sensory integration theory can be used to regulate incoming sensory input and allow an individual to maintain their optimal level of arousal to interact effectively with the world (Ayres, 2005). OTs can also draw from the principles of the Person-Environment-Occupation Model (Law et al., 1996) and the Model of Human Occupation (Kielhofner, 2008), which address the importance of the environmental context on occupational performance. The Multi-Sensory Environment (MSE, formerly known as Snoezelen; Shapiro, 2011) is a sensory environment specifically designed to reduce anxiety and/or pain by removing unpleasant or over-arousing stimuli and providing a relaxing sensory experience within a comfortable and safe environment. Sensory-adapted environments based on the MSE have been successfully implemented to improve outcomes in various populations, including children with ASD and other developmental disabilities (Cermak et al., 2015; Shapiro et al., 2007), individuals recovering from traumatic brain injuries (Hotz et al., 2006; Poza et al., 2013), adults with chronic pain (Schofield, 2002), and women in labor (Hauck et al., 2008).

Adapting and modifying the environment by reducing aversive stimuli and providing positive soothing alternatives have the potential to promote an individual's well-being (Shapiro et al., 2007). Occupational therapy practitioners can identify triggers in the waiting room that may provoke or increase anxiety and offer solutions to support a calming environment. Creating a sensory-friendly waiting room environment may be especially beneficial for individuals with sensory processing difficulties. A collaborative team of clinical researchers at the University of Southern California and Children's Hospital Los Angeles, led by OTs, have completed a pilot and feasibility study (Cermak et al., 2015) and are currently conducting a large-scale randomized controlled trial to examine whether a sensory adapted dental environment reduces anxiety and negative behavioral responses during oral care in children with ASD. The same vision and concepts that were used to design the dental treatment room can be applied to the waiting room to create a soothing environment that will prepare all individuals for a positive health care experience.

Using Occupational Therapy to Modify a Waiting Room

An occupational therapy doctoral (OTD) resident consulted with the dentistry department at a national rehabilitation center to provide recommendations to assist in developing a sensory-friendly waiting room in the dental clinic. To understand the typical experience of a patient, the OTD resident observed the waiting room at different times of the day and found:

- The TV was always on and loud; most patients did not seem to be paying attention.
- The high-pitched sound of dental instruments was audible in certain locations.
- Loud noises in the hallway mixed with TV noises when the waiting room door opened.
- Multiple notices and flyers were posted on the walls, presenting a distracting visual array.
- Overhead fluorescent lights were very bright.
- Leather chairs with thin armrests placed side by side against the wall were the only seating option.
- Some patients preferred to stand and walk around.

After these observations, the OTD resident used available literature and clinical experience to provide examples of evidence-based modifications to use in the waiting room to reduce anxiety (see Table 1); modifications are currently being implemented and effectiveness will be measured in the future. Effectiveness can be determined by measuring patient stress, anxiety, uncooperative behaviors, perceived sensory aversion of the environment, and/or satisfaction. Choice of tools should be guided by the goal of the modifications—psychometrically-sound assessments should be used for research, while patient-report surveys, comment boxes, and/or structured observations may be sufficient for quality improvement purposes.

Conclusion

To provide optimal health care, it is essential to consider how an individual's ability to process sensory information in an environment

Table 1. Examples of Evidence-Based Modifications for the Waiting Room to Reduce Anxiety

Visual Modifications	Paint walls with neutral, cool colors Replace fluorescent lighting with soft, warm, or dimmed lights Use natural sunlight (windows, skylights) Hang nature artwork Project slow-moving images on walls (Snoezelen) Place an aquarium, plants, or bubble tube in the corners of the room Remove unnecessary flyers from walls
Auditory Modifications	Play calming classical or nature sounds Have noise-cancelling headphones available Sound-proof doors leading to treatment areas Provide a quiet room separate from the waiting room Have a patient privacy talking area
Tactile Modifications	Provide various seating options (e.g., bean bag chairs, different fabrics, different sizes) Offer a basket of fidget toys or objects Supply weighted blankets, lap pads, or weighted stuffed animals
Vestibular Modifications	Offer rocking chairs as a seating alternative
Olfactory Modifications	Use aromatherapy scents (e.g., lavender) *Note.* Some people may be bothered by aromatherapy scents

can potentially affect behavior and participation (Pfeiffer & Stein Duker, 2016). OTs are experts in creating a match between the person and environment and recognize that the environment can serve as a therapeutic tool. They can consult on how to design and adapt the sensory environment of the health care waiting room to reduce anxiety and stress in patients, thereby improving the waiting room experience and enhancing the success of subsequent encounters.

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Eunice Y. Hong, OTD, OTR/L, is an Occupational Therapist at Casa Colina Children's Services Center in Pomona, California, and at St. Joseph Hospital in Orange, California. She can be reached at Eunicehong90@gmail.com.

Sharon A. Cermak, EdD, OTR/L, FAOTA, is a Professor at the University of Southern California Chan Division of Occupational Science and Occupational Therapy (USC OS-OT).

Leah I. Stein Duker, PhD, OTR/L, is an Assistant Professor of Research at USC OS-OT. She is also the *Quarterly* Editor for the Sensory Integration & Processing Special Interest Section.

About the Sensory Integration & Processing SIS

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

- Meet the SIPSIS committee members at www.aota.org/SIPSIS.
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Evidence Shows Link Between Sleep and Engaging in Meaningful Activities

We all know sleep is important, but more than a third of American adults are not getting enough sleep. A recent occupational therapy study explores the link between engaging in meaningful activities during the day and getting better sleep at night (https://bit.ly/2kg63RJ). You can also listen to a 5-minute podcast on the topic at https://bit.ly/2IVqaCJ.

An Innovative Approach to Promote Health and Well-Being of Caregivers of Children With Autism Spectrum Disorder

DD

Divya Sood, OTD, OTR/L; DeLawnia Comer-HaGans, PhD; Alyssa Barnec, MOTS; Kaitlin Dowling, MOTS; Katie Kozy, MOTS; Lauren Pranske, MOTS; Madisen Redar, MOTS; and Alexa Tietz, MOTS

With the prevalence of autism spectrum disorders (ASDs) rising to 1 in 68 children (Centers for Disease Control and Prevention, 2016) more caregivers are providing for children with ASD than ever. Caring for a child with ASD can be stressful; many parents are unaware of how to manage this stress and access resources to support their child's needs (Karst & Van Hecke, 2012). Occupational therapy practitioners can play a unique role within family systems by supporting the health and well-being of families, including the support of meaningful engagement (Stoffel et al., 2017). A healthy family has an effect on positive child outcomes, and practitioners can play a role in influencing these outcomes for the family and the child (Smith & DeGrace, 2016).

One way for occupational therapists (OTs) to help achieve positive outcomes is to design educational programs that build parental capacity to support their child's development. These programs should include information for caregivers about strategies to care for their own health and well-being. Many programs that have been developed are face-to-face; however, caregivers often experience barriers to attending face-to-face programming, such as lack of time and transportation, and inconvenient meeting schedules (Bank et al., 2006; Serwe et al., 2017). This challenge provides occupational therapy practitioners an opportunity to offer education and informational support to caregivers through telehealth, which uses service delivery through telecommunication and information technologies (American Occupational Therapy Association, 2013). Telehealth has been used to deliver various health services to individuals and provides a safe and efficient environment to deliver educational and other useful information to caregivers (Chi & Demiris, 2015). While there are some barriers to delivering occupational therapy interventions in telehealth, such as license portability, state restrictions, and the confidentiality of protected health information, this approach can be effective in providing support services such as caregiver training (Söderqvist et al., 2017).

Caregiver Stress

Research has shown that caregivers of children with ASD are more likely to report depressive symptoms and are at higher risk for developing depression than parents of typically developing children (Bekhet, 2016). Additionally, caregivers of children with ASD have higher stress levels than caregivers of typically developing children and children with other developmental disorders (Harrop et al., 2016). Caregivers face many unique challenges associated with children with autism, such as behavioral issues and limitations in social play and communication (Estes et al., 2013).

Family members are responsible for providing care and supervision (e.g., feeding, bathing, taking the child to school or community activities) to support the developmental needs of their child. For families of children with an ASD, these tasks can become overwhelming and affect their mental health (Bekhet et al., 2012). To improve the health and well-being of caregivers and families, occupational therapy practitioners can educate caregivers to identify stressors, share resources about maintaining health and well-being, and discuss effective coping strategies that can help improve their overall health. This article presents an innovative telehealth program whose purpose was to address the health and well-being of caregivers of children with ASD.

Explore evidence on Autism and Autism Spectrum Disorder in the Topics section of the *American Journal of Occupational Therapy* at http://ajot.aota.org/topics.aspx.

An Occupation-Based Health and Well-Being Program

This three-session telehealth program used the principles of coaching as discussed by Rush and Shelden (2011), which emphasizes using reflective questioning and guided discovery to generate solutions for an identified issue. A flyer of this program was shared with local occupational therapy practitioners. Although this program was conceptualized for all caregivers of children with ASD, only three mothers of children with ASD showed an interest in participating in the program.

During Session 1, the mothers were asked to identify their current stressors related to parenting their child. Some of the stressors identified were lack of sleep, personal illness, limited finances, temporary living situations, poor marital relationships, thinking about their child's future, limited social support, identifying reliable caregivers for their children, and finding work-life balance. Mothers also shared strategies they used to maintain their health and well-being, such as "I am planning to join gym classes" or "I plan to meditate," but none of them were actively implementing these strategies.

Mothers were then given access to a website that was developed specifically for this program, which offered education to them on topics related to autism; sensory processing; strategies they could use to promote their child's engagement at home, school, and community activities; and strategies to reduce stress (i.e., links related to deep breathing exercises, yoga). This website also included information related to local community resources and community activities specifically for children with autism. The educational website served as a databank of evidence-based resources that were stored in one place, which made them convenient for the mothers to access.

At the end of the session, the mothers were asked to identify a health-related goal for themselves. Examples included wanting to feel healthy by managing their weight, wanting to balance the roles of work life with being a single mother, and maintaining their mental health and well-being.

During Session 2, an OT and six occupational therapy students worked directly with the mothers by telephone, helping them to identify strategies through the process of reflective questioning for reaching the health goals they had identified in Session 1. For example, rather than providing a list of strategies to the mothers, the therapist prompted, "Tell me what you can do to reach your goal," and "How can your family members help you to reach your health-related goal?" Because the mothers had time to review the educational resources on the website before this session, they were actively engaged in coming up with strategies. Examples of strategies

included identifying a respite night for the child so the mother could attend an exercise class, incorporating deep breathing exercises and meditation by using free apps that were available through Android or Apple, and asking for help from family members to babysit once a week so the mother could have time to destress. After the telephone meeting, all the strategies were typed into a log and emailed to the mothers. The mothers then had 1 week to implement the strategies.

During Session 3, the mothers were asked to reflect on using strategies related to promoting their health and well-being. All the mothers were actively involved in an activity to meet this goal. For example, one mother went for a walk twice a week rather than just planning to go for a walk. Mothers were also asked to provide feedback on the strengths and limitations of the program.

Findings and Implications of the Program

This program was designed to actively involve mothers in becoming more aware of their own physical and mental health status and requiring them to reflect on their routine of personal health care. After participating in this program, most caregivers thought they were more aware of their stressors and that their emotional health had improved.

During this process of self-discovery, the mothers came up with a health goal, and through reflective questioning by the OT and occupational therapy students, they developed strategies to attain their goal. Most of the strategies were an adaptation to their daily routine (i.e., take an extra 200 steps when taking your dog for a walk) versus developing a new routine (i.e., join an exercise class), which can be challenging for already busy mothers. The mothers explained that they were now actively thinking about their own health, strategies they currently use, and new strategies to use in the future to enhance their own health and well-being.

Additionally unique to this program was the method of service delivery. Mothers were able to participate because this program was online, and all meetings and other informational material could be accessed through their phone. This program was a viable solution to some of the barriers that mothers experience with face-to-face programming. Mothers appreciated the educational resources offered as a part of the program and expressed that the website was extremely helpful and made them aware of the resources that exist in their community to support them and their child.

Conclusion

Occupational therapy practitioners are uniquely positioned as health care providers to promote the health and well-being of caregivers of children with ASD. Occupational therapy practitioners are clinically skilled to identify caregivers who are experiencing high levels of stress and make them aware of their health status. They can enhance caregivers' understanding of how stress can affect their occupation of parenting and help coach caregivers to identify strategies that can be incorporated into their daily routine of personal health care. Additionally, practitioners can collaborate with caregivers to develop a realistic plan to implement strategies to promote their health.

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Divya Sood, OTD, OTR/L, is an Associate Professor in the Department of Occupational Therapy at Governors State University in University Park, Illinois. She can be reached at dsood@govst.edu.

DeLawnia Comer-Hagans, PhD, is an Associate Professor in the Department of Health Administration at Governors State University.

Alyssa Barnec, Kaitlin Dowling, Katie Kozy, Lauren Pranske, Madisen Redar, and **Alexa Tietz** are students in the Master of Occupational Therapy Program at Governors State University.

About the Developmental Disabilities SIS

The Developmental Disabilities Special Interest Section (DDSIS) focuses on how occupational therapy assessment and intervention can facilitate the inclusion of individuals with developmental disabilities across the lifespan in home, school, work, and community life. The DDSIS provides a forum for practitioners, educators, students, and researchers to exchange information and strategies and to network by highlighting best practice, current trends, and research updates.

- Meet the DDSIS committee members at www.aota.org/DDSIS.
- Join the CommunOT™ discussion at www.aota.org/DDSIS-forum.

Leisure-Based Group Intervention for At-Risk, Urban Dwelling Children

MH

Emily K. Simpson, PhD, OTR/L; Alyssa Lukas, MOT, OTR/L; Stacy Jones, MOT, OTR/L; and Magdalena M. James, MOT, OTR/L

The overall crime rate in Chicago, especially violent crime, is significantly higher than the national average (U.S. Department of Justice, 2017). Underscoring this problem is that Chicago's violence has disproportionate effects on children and young people (Davis et al., n.d.). Nearly half of Chicago's homicide victims are between 10 and 25 years old, with an estimated 65% of violent crime arrests being young people under 25 (Amnesty International, 2014). Consequences of violence for children include interference with typical development and disruption of occupations, including school attendance and establishing social networks, which provide a foundation for future roles (Margolin & Gordis, 2000). Children exposed to community violence experience increased rates of depression, aggression, and delinquency; poorer health; poor academic performance; and increased risky sexual behaviors, all risk factors for future violence perpetration (Hong et al., 2014). These children may be ostracized because of behavioral issues resulting from poor coping skills or immature social behaviors. Thus, fewer opportunities exist for social skill development and play with other children.

An important aspect of violence prevention is how at-risk children spend their free time. With nearly 90% of their time outside classrooms in a given year, school-aged children can have opportunities in a portion of this time to develop social skills, interests, and competencies through leisure participation, positively affecting development (Wood et al., 2009). Conversely, children who spend their free time in high violence community areas may result in preoccupation with avoiding danger and staying home. At-risk children often have greater access to negative leisure activities, including gangs, illegal substances, and criminal activity (Reno & Riley, 2000). After-school time presents the greatest risk for at-risk children to become involved in crimes; most juvenile crime occurs between 2 p.m. and 8 p.m. (Reno & Riley, 2000).

Leisure participation is associated with childhood development, academic achievement, acquisition of valuable skills, self-efficacy, and shaping of self-identity (Bazyk & Bazyk, 2009; Havitz et al., 2013). It also provides opportunities for social interaction and productive time use. With fewer resources in lower socioeconomic areas, at-risk children are often limited by barriers such as responsibilities for sibling child care, lack of available programs and activities, and inadequate transportation (Terzian et al., 2009). With limited access to positive leisure activities, children are deprived of opportunities to further develop skills and interests, creating additional risk for criminal involvement (Davis et al., n.d.).

Collaboration With Community Partners

During a year-long graduate research project, an occupational therapy faculty member and three occupational therapy graduate students (hereon referred to as the occupational therapy team) consulted with an elementary after-school program providing sports activities in a high-crime Chicago neighborhood. Since after-school program participation required a referral from school administrators based on academic performance and prosocial behaviors, program staff feared that children with the greatest need were excluded. These children had behavioral problems and poor academic performance, possibly because of stressors associated with community violence. To address the need for broader leisure and social participation, the occupational therapy team, program staff, and school administrators identified children to target for occupational therapy services. The objectives were to provide them with creative ways to participate in social and solitary leisure pursuits, opportunities to explore leisure interests in safe and supportive environments, after-school enrichment, and social interaction through practicing social skills and enabling friendship development.

Intervention

Intervention was based on evidence-based approaches to leisure exploration with children with disabilities (Tonkin et al., 2014). Evidence supports approaches using social-based groups, environmental modifications, and implementation within school leisure contexts (i.e., recess). Because the needs of at-risk children without documented disabilities primarily stem from environmental barriers related to community violence, the team's intervention framework was further informed by Bazyk and Bazyk's (2009) occupation-based leisure group for at-risk youth, providing opportunities for appropriate emotional expression, peer socialization, and interest development.

Intervention, conducted by three occupational therapy students with the occupational therapy faculty supervision, included 1.5-hour closed group sessions immediately after school once per week for 5 weeks. Ten second-grade students participated in all five sessions. Group session structure, organization, and facilitation were guided by Cole's (2012) seven-step group leadership format. Each successive week presented developmental and progressive challenges. During each session's introductory period, children socialized with peers and group facilitators about a leisure theme of sports or crafts. Then, 15- to 30-minute education segments oriented children to the specific leisure type. Through choices, children experienced opportunities to express preferences and collaborate with peers, determining each session's specific direction. Guided, structured activities gave the children opportunities for decision making, problem solving, socializing, and the use of peer supports. Session themes included introduction to leisure, leisure with family and friends, solitary leisure, planning leisure activities, and celebrating through leisure. After each session, children were prompted to discuss the emotions experienced, lessons learned, challenges encountered, and ways they accomplished tasks and solved problems through teamwork. Throughout the sessions, the children were rewarded for prosocial behaviors and acknowledged for expressing their emotions in positive ways. Resources were provided on creative participation strategies for leisure activities despite limited access (e.g., space, finances, supervision). Children were helped to plan for future leisure participation.

Outcomes

Program staff noted that the children demonstrated increased problem solving and generalization capacity, plus greater perseverance to complete tasks and try new things. For example, one child previously rejected staff suggestions to try outdoor activities because of poor coordination and fears of making mistakes in front of peers. After the intervention, the child initiated participation in a snowman-building challenge, even joining other children in clean-up by flattening snow through jumping on the snowmen. He expressed pride for having tried a novel activity and later engaged his sister in a similar snowman-building competition. Children also began approaching staff with ideas for activities. One child volunteered to clean up after craft activities by collecting scraps to use in later projects. Parents reported their children's use and practice of newly gained skills at home, willingness to perform unfamiliar household tasks, and persistence on difficult homework assignments. One child's parents stated that their son had begun asking for chores and helping his siblings with their daily activities, including dressing his baby brother. Several parents expressed surprise at their children's sudden interest in schoolwork and desire to talk about things learned during the school day. Finally, staff described changes in children's social behaviors within the school environment, including developing friendships, initiating conversations, and demonstrating concern and empathy for peers. Previously isolated children began to tentatively join recess and after-school activities. They used their new knowledge of leisure to become more assertive, suggesting games and topics of conversation with other children. Children also provided comfort to upset peers after injury and offered words of encouragement. Especially striking, the two most ostracized children developed a mutual friendship, appearing to reduce some of their socially problematic behaviors. After they began playing with one another in age-appropriate ways, they ceased yelling or throwing items at other children during recess. With peer feedback, they experimented with new social skills and displayed less need to seek negative attention.

Children provided similar feedback on the intervention, indicating that participation improved their self-confidence and provided opportunities to learn from mistakes without fearing ridicule or failure. All children described learning at least one new idea about leisure from the intervention's collaborative groupwork, identifying specific tasks they wouldn't have accomplished without the help of a peer or occupational therapy team member. One child explained being afraid to eat his created dirt cup (gummy worms and crushed Oreos) because he was concerned he'd mess up his handiwork. After receiving encouragement from peers that he could make another one, he was able to enjoy it. Other children gave examples of excelling at new leisure activities and talked about how new skills enabled

positive feelings about themselves. Children described transferring intervention leisure skills to other life areas, such as teaching activities to siblings and suggesting activities to peers at school. They expressed satisfaction about acquiring new hobbies and interests, feeling less bored and more motivated outside of school. One child described feeling less frustrated about being alone after school after having learned ways to do quiet craft activities with basic household supplies instead of watching television. Finally, children were especially excited to talk about new friendships, saying they felt more socially comfortable because of practicing teamwork and communication skills within safe environments.

Considerations for Practice

Lacking safe play opportunities and having limited resources, at-risk children tend to engage in isolated, passive play. Violence and crime within their neighborhoods results in occupational deprivation, creating greater risk for engaging in occupations with potentially negative consequences, such as gang-related activities and substance use. With little to occupy their time and few safe spaces to play and socialize, they miss many learning opportunities that are crucial for development and transition into adolescence. It is therefore critical that occupational therapy practitioners consider various methods to promote leisure participation, including:

- Consultation with schools and after-school programs in under-resourced communities to maximize available programming resources and access through environmental modifications
- Education for communities, schools, and families on the value of leisure participation as a meaningful way to occupy time and develop children's social skills
- Direct intervention for children to provide alternative, healthy, leisure occupations as a diversion from unhealthy occupations
- Program development to create sustainable community programs for leisure exploration and participation in underserved communities

With safe and accessible environments in which to play, learn, explore, make mistakes, and problem solve with peers, at-risk children have the potential to thrive and develop skills to support their participation in healthy occupations. Occupational therapy has a distinct value in providing these opportunities through occupation-based group interventions; promoting the importance of leisure participation for children in a holistic way that includes families, peers, and school staff; and encouraging children to use their environments in creative and fun ways.

Explore evidence on Mental Health in the Topics section of the *American Journal of Occupational Therapy* at http://ajot.aota.org/topics.aspx.

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Emily K. Simpson, PhD, OTR/L, is an Associate Professor in the Occupational Therapy Program at Midwestern University in Downers Grove, Illinois. She can be reached at esimps@midwestern.edu.

Alyssa Lukas, MOT, OTR/L, is an Occupational Therapist in the Acute Rehabilitation Unit at Gottlieb Memorial Hospital in Melrose Park, Illinois.

Stacy Jones, MOT, OTR/L, is an Occupational Therapist at Alexian Brothers Rehabilitation Hospital in Elk Grove Village, Illinois.

Magdalena M. James, MOT, OTR/L, is a Pediatric Occupational Therapist at Advocate Health in Downers Grove, Illinois.

Farewell From the MHSIS Chairperson

Susan Noyes, PhD, OTR/L

It has been my privilege to serve as Chairperson of the Mental Health Special Interest Section (MHSIS) Standing Committee for the last 3 years, working with a stellar MHSIS Committee: Liz Lannigan, SIS *Quarterly* Editor; Susan Connor, Professional Development Coordinator; Sean Getty, Forums Coordinator; and several outstanding student interns—Elizabeth Duggan, Alexandra Gaston, Esmeralda Lizcano, Alyson Caron, and Natalie Petrone.

The MHSIS Committee was driven to meet our mission of supporting SIS members to network, share clinical resources and best practices, stay up to date on legislative issues, and promote mental health practice in occupational therapy. Highlights of our term include three very well-attended Annual Programs at AOTA Annual Conferences: Using the Performance Assessment of Self-Care Skills (PASS) for Transition Planning in Illinois; Private Practice in Mental Health Occupational Therapy; and Occupational Therapy's Role in Criminal Justice Systems. Additionally during our term, the federal Certified Community Behavioral Health Center (CCBHC) initiative began. In 2016, in an effort to support the occupational therapy "ambassadors" appointed by AOTA in the CCBHC planning grant states, Liz Lannigan authored and mentored three student interns to co-author a guiding document entitled, "*Occupational Therapy Service Outcome Measures for Certified Community Behavioral Health Centers (CCBHCs): Framework for occupational therapy service with rationale for outcome measures selection and listing of occupational therapy outcome measure tools.*" This document was distributed to CCBHC state occupational therapy ambassadors to assist them in describing and promoting the distinct value of occupational therapy as a required service in CCBHCs. In addition to being posted as a resource for all occupational therapy practitioners on the AOTA website, the CCBHC document was presented by Liz Lannigan in 2017 at both the AOTA Mental Health Specialty Conference and as a webinar for the Canadian Association of Occupational Therapists.

During the last 3 years, the energy and passion of occupational therapy practitioners in mental health was illuminated by their increasing participation on the OT Connections platform. With a targeted effort to increase engagement by posting MHSIS Committee meeting minutes and other committee-initiated posts, we more than doubled the member participation on OT Connections, and the average number of new posts per month increased by more than 50%.

All told, occupational therapy practitioners in mental health are a small yet mighty group. We must continue to assert our voice in advocacy for our clients, and leverage our best efforts to that end. I am confident that our incoming MHSIS Committee will take up this charge, and I encourage all of you to stay actively involved with them in this crucial work.

Evidence Supports IPS for Adults With Serious Mental Illness

Strong evidence supports IPS (Individual Placement and Support) as an effective intervention for adults with serious mental illness to become employed or return to the workforce (https://bit.ly/2rXWVpa). Learn more about Adults with Serious Mental Illness in the recent Critically Appraised Topics available at http://www.aota.org/Practice/Mental-Health/Evidence-Based.aspx#Serious.

Maximizing Independence in Older Adults With Visual Impairment and Hearing Loss

PA Julie Ann Nastasi, ScD, OTD, OTR/L, SCLV, CLA, FAOTA

Visual impairment and hearing loss are common challenges for older adults. The World Health Organization (WHO) reports 253 million people have visual impairment, 81% of whom are over the age of 50 and have moderate visual impairment, severe visual impairment, or blindness (WHO, 2017a). Macular degeneration, glaucoma, and cataracts are common age-related conditions that lead to decreased visual acuity, visual fields, and contrast sensitivity (Gagne & Peirce, 2017; Kaldenberg & Smallfield, 2013). Older adults with vision loss have twice as many falls as those without visual impairment (Crews et al., 2016). Occupational therapy practitioners provide fall prevention interventions to decrease the likelihood of falls.

Hearing loss affects 164.5 million people ages 65 and over; approximately one-third of the population over 65 years of age has disabling hearing loss (WHO, 2012, 2017b). Hearing loss results from changes in peripheral hearing and central auditory processing. Damage occurs over time. Hearing loss disrupts participation for older adults when they are unable to hear conversations, the television or radio, and other forms of verbal communication.

Dual sensory loss (vision and hearing) is estimated to range from 7.8% to 21% of the older adult population (McDonnall, 2009). Older adults with visual impairment and hearing loss experience greater challenges in communication (McDonnall et al., 2016; Schneider et al., 2011) and social participation (Crews & Campbell, 2004; Schneider et al., 2011), and higher rates of depression (McDonnall et al., 2016; Schneider et al., 2011) than their peers without these conditions. Occupational therapy practitioners are the only professionals who address the person, the task, and the environmental and contextual factors to improve occupational performance for older adults with these sensory losses.

Creating Environments to Maximize Independence

Occupational therapy practitioners screen for and address implications of vision and hearing loss with their clients and create modifications in the home environment to allow older adults to remain independent in their occupations (Haanes et al., 2015; Lillyman, 2017; Unwin et al., 2009). For example, increasing contrast and improving lighting increase participation for those with visual impairment (Kaldenberg & Smallfield, 2013). Proper wear and care of hearing aids and controlling the acoustic environment increase independence and social participation for older adults with hearing loss or dual sensory loss (Stans et al., 2017; Vreeken et al., 2015).

The Home Environment

Occupational therapy practitioners should talk to clients and their families about the meaning of home and use a client-centered approach; while the home is a physical space, it also holds memories and personal value. Practitioners need to understand the importance of each client's physical and social environments in the home and community (Siebert et al., 2014). Occupational therapy practitioners work with clients and their families to adapt their home environment to maximize independence. The physical environment can support or hinder independence for people with visual impairment (Haanes et al., 2015; Kirchner et al., 2008; McGrath & Rudman, 2013). Furniture placement, increased lighting, decreased noise (including ambient noise from air conditioners and other appliances and devices) can facilitate participation for clients with dual sensory loss (Lillyman, 2017). In a randomized controlled trial, participants' vision and hearing significantly improved when they received education and encouragement; vision also improved through addressing light conditions in their homes (Haanes et al., 2015). More broadly, practitioners also address spatial relationships and comfort with their clients (Brennan & Bally, 2007). Table 1 describes various occupational therapy interventions for clients with low vision, hearing loss, and dual sensory loss.

The Community and Social Environments

While clients and their families do not have control over community environments, they can be aware of and prepared to respond to hazards and obstacles that they may encounter. Some barriers for mobility in the community include poorly maintained sidewalk pavement and transportation options (Kirchner et al., 2008; McDonnall et al., 2016). Knowing and selecting safe options for different conditions enables safe travel. Sidewalks that may be fine on sunny, dry days may become problematic during rain and snow because of poor drainage and puddles. Likewise, access to public transportation may also be affected by physical obstacles and/or weather hazards.

Another challenge in the community as well as the social environment relates to communication—being understood and able to understand others (McDonnall et al., 2016). Clients with hearing loss may have difficulty understanding responses from employees in shops because of the volume of speech or distance between them, and ambient noises. Older adults with visual impairment have expressed embarassment leading to social isolation because of difficulties identifying people in social environments (McGrath & Rudman, 2013), or not understanding what people are saying (McDonnall et al., 2016). Occupational therapy practitioners work with clients and their families to identify problematic areas and ways to avoid potential challenges, including going to familiar or consistently quiet environments (or going at quieter times); modifying sound levels by selecting areas with less background noise; sitting at eye level; and sitting or standing within 3 to 6 feet of other people (Stans et al., 2017), with their backs to windows to decrease glare. When older adults with visual impairment are able to participate in their social roles they experience fewer depressive symptoms and greater satisfaction (Renaud et al., 2010).

Case Example

Jill was a 75-year-old woman with macular degeneration and hearing loss. The occupational therapy initial evaluation found that Jill had impaired visual acuity, decreased central field, decreased contrast sensitivity, and decreased hearing. Jill reported problems hearing timers, preparing food, and writing letters in her home. Jill identified her goals for independence in meal preparation and writing letters to friends.

During the home evaluation the occupational therapist used a light meter and noted Jill's kitchen had poor lighting and the volume settings on her microwave were low. Modifications included additional lighting under Jill's kitchen cabinets to illuminate the counters, and increasing the volume of the microwave timer to a level that Jill could hear (some appliances have a variable beeper volume that can be adjusted). In addition, Jill was taught strategies to increase contrast, such as using a different-colored cutting board to cut and chop food. With the additional lighting, increased vol-

Table 1. Interventions for Low Vision, Hearing Loss, and Dual Sensory Loss

	Audition (hearing)			Vision			Spatial Relations
Questions	Do background noises exist?	Are volumes adequate?	What additional technologies can be considered?	Is there adequate light?	Is there contrast?	What additional technologies can be considered?	What position?
Intervention ideas	• Reduce background noise with rugs and curtains. • Sit away from open windows and doors. • Close doors or windows that do not need to be open.	• Increase the volume on the television and appliances. • Sit closer to the television.	• Closed captioning on television. • Strobe or flashing doorbell, weather and fire alarm alerts.	• Measure the amount of light available and add task and under-counter lights to increase lighting if needed. • Use adjustable lamps with hoods, and blinds or shades to decrease glare.	• 20/20 pens (similar to a Sharpie marker) increase contrast for writing. • Bold-line paper provides contrasting lines to remain oriented while writing. • All black and all white plates for food create contrast.	• Adjustable mirrors for grooming • Single-handle scald-proof faucets • Voice output microwaves • Tactile kitchen devices • Lighted keyholes or doorbells • Bright lights with motion or sound detectors	• Sit or stand at eye level 3 to 6 feet from others. • Reduce glare by facing away from windows. • Reduce excessive sound by meeting in private or closed spaces.
Reference	Brennan & Bally, 2007		Abledata (2018); Unwin et al., 2009	Nastasi et al., 2017; Warren & Barstow, 2011		Abledata, 2018; Unwin et al., 2009	Stans et al., 2017

ume, and increased contrast, Jill was able to independently complete meal preparation. The occupational therapist also introduced Jill to bold-line paper and a 20/20 pen to increase contrast for writing. The bold-line paper allowed Jill to remain on the line while writing. The 20/20 pen provided enough contrast to allow Jill to read what she wrote. Thus, Jill was able to achieve her goals of independently preparing meals and writing to her friends.

Conclusion

Occupational therapy practitioners working together with their clients and families create environments that maximize independence for older adults with sensory loss from visual impairment, hearing loss, or dual sensory loss. Practitioners can teach strategies to help clients and caregivers problem solve (Blaylock & Vogtle, 2017) and engage in occupations in the community and social environments. Addressing the environments and contexts allow older adults to maximize their independence (American Occupational Therapy Association, 2016; Kaldenberg & Smallfield, 2013).

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Julie Ann Nastasi, ScD, OTD, OTR/L, SCLV, CLA, FAOTA, is an Assistant Professor at the University of Scranton in Scranton, Pennsylvania. She may be reached at Julie.Nastasi@scranton.edu.

About the Productive Aging SIS

The Productive Aging (formerly Gerontology) Special Interest Section (PASIS) provides resources and support for clinicians, researchers, educators, and students who are addressing the complex needs of older adults along the continuum of care. It highlights new and innovative intervention approaches for older adults with physical, psychosocial, and developmental needs, as well as relevant policy impacting current geriatric practice.

- Meet the PASIS committee members at www.aota.org/PASIS.
- Join the CommunOT™ discussion at www.aota.org/PASIS-forum.

Lively Living: An Occupation-Based Intervention to Enhance Participation in Community-Dwelling Older Adults

HCH

Bethany Slaughter, OTS; Katherine McGowan, OTS; Ashlyn Metheny, OTS; Hannah Underdown, OTS; Kali Wingerter, OTS; and Lynne Clarke, OTD, MS, OTR/L

By the year 2030, it is estimated that close to 20% of the U.S. population will be age 65 or older (U.S. Census Bureau, 2014). Older adults often face multiple chronic health conditions, both physical and cognitive, which can negatively affect functional capacity. With this large, increasing number of older adults with chronic health conditions, preventative care is essential to reduce the need for long-term care (Centers for Disease Control and Prevention, 2015). Engagement in physical activities and exercise has been shown to reduce risks for chronic diseases, psychological conditions, and mortality in older adults (Chodzko-Zajko et al., 2009); however, overall participation rates for older adults are low, with only 12.7% of older adults in the United States meeting the federal physical activity guidelines (U.S. Department of Health and Human Services, 2018). Lifestyle-activity engagement programs, which typically include social, cognitive, and physical activities, have been suggested as an intervention to address limited participation in preferred occupations for older adulthood (Brown et al., 2016).

Lifestyle activity engagement programs for older adults in the community should include not only social, cognitive, and physical activities, but also client-centered occupations and activities of choice (Stav et al., 2012). Occupational therapists' purpose for implementing lifestyle activity engagement programs is to prevent and manage age-related conditions by increasing clients' functional abilities, promoting social participation, and enhancing quality of life (Steultjens et al., 2004).

Existing Programs

The Well Elderly Study, conducted between 1994 and 1997, focused solely on the benefit of preventive occupational therapy for well older adults. The study implemented The Well Elderly Treatment Program, which resulted in highly successful changes in physical and mental health, occupational functioning, and life satisfaction among community-dwelling older adults (Jackson et al., 1998). The program consisted of group sessions that emphasized preventing the health risks of older adulthood in addition to developing individualized plans of lifestyle redesign and use of occupations as ways to adapt to the challenges associated with aging (Jackson et al., 1998). The program consisted of a series of eight content areas, including introduction to the power of occupations, aging, health and occupation, transportation, safety, social relationships, cultural awareness, finances, and an integrative summary: the Lifestyle Redesign Journal. For the Lifestyle Redesign Journal, participants created a book of their own occupational experiences. They then reflected on their own occupational analysis to gain an appreciation of the relationship between occupations and well-being (Jackson et al., 1998). The study concluded that a program focused on individualized occupations and their occupational experiences has the potential to enhance life satisfaction and overall well-being in community-dwelling older adults.

Similarly, Chippendale and Boltz (2015) developed a program for community-dwelling older adults to enhance their sense of purpose and meaning in life—both of which have been shown to prevent disability and mortality (Boyle et al., 2009). The Living Legends program consisted of both a life review writing workshop and an intergenerational program. The older adults first attended the "Share Your Life Story" life review sessions, providing them the opportunity to write about their lives in chronological order. They then attended the intergenerational program, where they shared their life review story, knowledge, and experiences with the next generation. The combination of life review writing and intergenerational exchange were used to address depressive symptoms along with a sense of purpose and meaning in life that have been shown to reduce functional decline in older adults. Their program resulted in an increase in sense of purpose and meaning in life, thus promoting healthy aging (Chippendale & Boltz, 2015).

While both programs had considerable effect on the overall health of community-dwelling older adults, few programs have been developed and implemented in occupational therapy practice since. Inspired by both the Well Elderly Study and Living Legends, we (the authors) developed and implemented a similar program for older adults in the community.

Lively Living

The Lively Living program consists of client-centered, occupation-based activities that are cognitively, physically, and socially stimulating, with the goal of increasing individuals' life satisfaction, overall well-being, and social participation.

Farewell From the HCHSIS Chairperson

Marnie Renda, OTD, MEd, OTR/L, CAPS, ECHM

It has been an honor to serve as the Home & Community Health Special Interest Section (HCHSIS) Chairperson for the past 3 years. I would like to thank my fellow committee members Su Jin Lee (Forums Coordinator), Emily Somerville (*Quarterly* Editor), Marian Keglovits (Professional Development Coordinator), and Gregg Frank (Home Modification Network Coordinator), and the student interns for all their hard work. Our committee strove to communicate the distinct value of occupational therapy to practitioners and stakeholders, promote occupational therapy services, and help practitioners identify useful research resources to promote evidence-based practice. The committee also initiated PEP (Putting Evidence into Practice) Talks, designed to address challenges faced by members, generate potential solutions, identify supporting research, and connect members with existing AOTA resources.

Home and Community Health is a dynamic and expanding area of practice. Over the past 3 years we have seen continual growth in both traditional and nontraditional community-based care at the federal and state levels. During these rapid health care changes, it is essential for practitioners to engage in health care advocacy and policy. There are tremendous opportunities to showcase our distinct value of occupational therapy and how we can play a pivotal role in maximizing health care outcomes and the well-being of individual clients, populations, and communities.

Nine older adults participated in the Lively Living program at a community-based senior center. The program consisted of participants completing a demographic questionnaire, Modified Interest Checklist (Kielhofner & Neville, 1983), 36-Item Short Form Health Survey (SF-36; Ware et al., 1993, 2002), and Life Satisfaction Questionnaire (LISAT-9; Fugl-Meyer et al., 1991). Results from the assessments were used to develop individualized occupational profiles and tailor the Lively Living program activities to the participants' interests and to measure the effect on life satisfaction and perceptions of physical and mental health.

Intervention

Our participants engaged in a 60-minute session once a week for 8 weeks. These eight sessions were composed of activities previously indicated on participants' Modified Interest Checklists and included both physically and cognitively stimulating activities (see Table 1).

One of the five occupational therapy students at the senior community center led each group session while the remaining four students provided further assistance and support. All eight sessions consisted of a warm-up activity, a client-centered and occupation-based activity, a discussion on implementing the activity in everyday life, and then a debriefing session summarizing the significance of the activity. We implemented Cole's Seven Steps (Cole, 2012) for each session to structure our time in an engaging and meaningful way to ensure the sessions maintained an occupational focus. The seven steps are introducing the activity and leaders of the group, participating in the activity, sharing experiences of the activity, processing how the experience made them feel, generalizing the shared experiences of the group, applying the underlying principles of the activity to everyday life, and summarizing the most important aspects of the session (Cole, 2012).

At the end of our program, we conducted a brief semi-structured interview that revealed common themes of health management, leisure activities, physical activity, socialization, maintenance of mental health, generativity, and participation in daily activities as contributors to the older adults' successful aging, life satisfaction, and overall health. Results of the participants' LISAT-9 and SF-36 indicated that they experienced increased life satisfaction and perceptions of physical and mental health after participating in the program.

Implications for Occupational Therapy Practice

The results of the Lively Living program have the following implications for occupational therapy practice:

- The Lively Living program encourages social participation among well older adults.
- The Lively Living program supports occupational therapy's role in a community-based setting for well older adults by promoting participation in meaningful occupations and life roles.
- The Lively Living program advocates the need for and benefits of occupational therapy being more involved in a community versus a medical setting.
- The Lively Living program supports evidence from previous research on how to develop and structure occupational therapy interventions in a community-based setting.

Table 1. Lively Living Sessions and Descriptions

Session Number	Session Name	Description
1	Introduction / Pre-Testing	**Warm-Up Activity**: Yarn-ball toss "get to know you" game. **Pre-Testing**: Informed Consent, Demographic Questionnaire, Modified Interest Checklist (Kielhofner & Neville, 1983), Life Satisfaction Questionnaire (LISAT-9; Fugl-Meyer et al., 1991), and 36-item Short Form Health Survey (SF-36; Ware et al., 1993, 2002).
2	Mosaics	**Warm-Up Activity**: TheraPutty hand exercises. **Activity**: Participants chose either a small box or a coaster on which to create a mosaic design. Each individual traced their chosen object on a piece of paper and planned their design with mosaic pieces. Finally, each mosaic piece was placed on the object itself, using grout and popsicle sticks.
3	Chair Yoga & Thera-Band	**Warm-Up Activity**: Share finished mosaic artwork. **Activity**: Participants were led through a series of seated and standing chair exercises and Thera-Band exercises focusing on flexibility, endurance, and strength.
4	Healthy Versus Unhealthy Collage	**Warm-Up Activity**: Charades with words that included unhealthy and healthy activities (i.e., smoking, walking). **Activity**: Participants were required to cut out foods and activities that they deemed healthy or unhealthy from provided magazines. Once they had their items cut out they taped their pictures on either the "healthy" or "unhealthy" poster boards hanging on either side of the room.
5	4th of July Activity	**Warm-Up Activity**: Participants followed written instructions to prepare a simple holiday dessert and cut their own food materials with plastic utensils. **Activity**: Participants played outdoor games in the courtyard, including washers and bean bag toss, which required standing tolerance, depth perception, coordination, balance, and other skills.
6	Theradance	**Warm-Up Activity**: Catchphrase: Participants were given a word on a piece of paper that they had to describe for the rest of the group to guess without using the word itself. **Activity**: Participants were taught dance steps that incorporated Thera-Bands for strengthening and completed a 4-minute dance, either seated or standing. Participants also completed stretching exercises while seated and practiced mindfulness.
7	Qualitative Data Collection	**Warm-Up Activity**: Participants painted their favorite thing or something that made them happy and shared that painting with the group. **Activity**: 30-minute group qualitative interview.
8	Musical Bingo / Post-Testing	**Warm-Up Activity**: Participants played musical bingo that required listening to and identifying a song, visually scanning their bingo sheet, and using fine motor skills to pick up dried beans to cover the space. **Post-Testing**: LISAT-9 and SF-36.

- The Lively Living program promotes aging in place in well older adults by facilitating occupational engagement, a distinct value of occupational therapy practice identified by the American Occupational Therapy Association (2016).

Conclusion

The Lively Living program is a client-centered, occupation-based program composed of both physically and cognitively stimulating activities. The older adults who participated in Lively Living expressed that the program was something they looked forward to weekly, as it provided opportunities to engage with younger people as well as their peers, learn about healthy life choices, and learn about new therapeutic techniques that they could use in their everyday life. The program showed positive trends in both life satisfaction and perceptions of physical and mental health.

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Bethany Slaughter, OTS, is an occupational therapy student at Rockhurst University in Kansas City, Missouri. She can be reached at SlaughterB@hawks.rockhurst.edu.

Katherine McGowan, OTS; **Ashlyn Metheny**, OTS; **Hannah Underdown**, OTS; and **Kali Wingerter**, OTS, are occupational therapy students at Rockhurst University.

Lynne Clarke, OTD, MS, OTR/L, is an Associate Professor of Occupational Therapy at Rockhurst University.

About the Home & Community Health SIS

The Home & Community Health Special Interest Section (HCHSIS) provides resources and support for occupational therapists and occupational therapy assistants who provide services in the home and community. Examples include home health, adult day services, senior housing, wellness programs, community mental health centers, home modification, and accessibility consultation. The HCHSIS also includes the Home Modification Network.

- Meet the HCHSIS committee members at www.aota.org/HCHSIS.
- Join the CommunOT™ discussion at www.aota.org/HCHSIS-forum.

Evidence Supports Using Teams to Improve IADL Function Among Older Adults

There is evidence to support the use of multidisciplinary teams providing care at home for improving IADL function among older community-dwelling adults (https://bit.ly/2GF2Ljq). Learn more by reading the Critically Appraised Topics on productive aging at http://www.aota.org/Practice/Productive-Aging/Evidence-based.aspx.

Implementing Research Into Everyday Occupational Therapy Practice: The IPASS-R Program

RD

Heidi Fischer, OTD, OTR/L; Sarah Zera, OTR/L; Rosetta Robertson; Danbi Lee, PhD, OTR/L; and Joy Hammel, PhD, OTR/L, FAOTA

An evidence-based intervention, the Improving Participation After Stroke Self-Management (IPASS) program is a group-based self-management intervention co-led by an occupational therapist (OT) and a stroke survivor (Lee et al., 2015). It emphasizes consumer-directed participation in home, community, and work. In a randomized controlled trial, the IPASS intervention showed increased self-efficacy in managing health and participation, and improved participation among 97 community-dwelling adults who had sustained a stroke and completed rehabilitation services (Wolf et al., 2016). The IPASS-Rehabilitation (IPASS-R) version was developed by us (the authors) to create a practical application of this evidence-based program in the clinical setting. In this article, we describe the steps needed to modify and implement the program into a billable occupational therapy intervention.

Bridging the Gap Between Research and Occupational Therapy Practice

To make the IPASS-R relevant and realistic for the clinical setting, the lead OT met with participants who had experienced stroke, developers and facilitators of the original IPASS, and day rehabilitation clinicians to adapt the intervention to fit into the clinical setting. Implementing the intervention involved balancing the need for maintaining the integrity of the original IPASS while meeting the demands of the clinical settings (see Table 1).

To assure success, a series of stakeholder meetings (at systems and grassroots levels) were initiated to explore support for a participation-focused, self-management intervention and to anticipate challenges and problem solve strategies for enhancing feasibility before implementation. Specifically, the advantages of implementing an evidence-based program as part of standard occupational therapy and delineating a process for assessing its effect were discussed with the Vice President of Patient Services and the Directors of the Stroke and Day Rehabilitation services. During a meeting with the Manager of the specific day rehabilitation site and the team of therapists (i.e., physical therapist, OT, speech-language pathologist), the clinical OT served as a knowledge broker for the intervention and sought support and negotiated logistics for patients to participate in the intervention as a reimbursable occupational therapy service. The

Table 1. Comparison of Improving Participation After Stroke Self-Management (IPASS) and IPASS-Rehabilitation (IPASS-R) Programs

IPASS	IPASS-R
12-session intervention	6-session intervention, with optional 7th session
Includes the Chronic Disease Self-Management Program (CDSMP; Lorig et al., 2000)	Did not include the CDSMP
Delivered once a week	Delivered 2 times a week
Sessions last 2 hours and 30 minutes	Sessions lasted 45 minutes
Participants are finished with rehabilitation services and living in the community	Participants were in day rehabilitation
Participants plan and participate in one community outing	Participants planned and participated in two community outings
Intervention provided as part of a randomized controlled trial	Intervention provided as a billable occupational therapy service

stroke survivors and potential patients were asked for input on the potential benefit of a self-management group as a part of their usual care before implementation of the program.

Improving Participation in Everyday Life After Stroke

The Person–Environment–Occupation–Performance Model (Baum & Christiansen, 2005) and Bandura's Social Cognitive Theory (Bandura, 1977) were the key theoretical models guiding the original IPASS and the IPASS-R. Because chronic conditions are lifelong and not likely to be cured, this framework allows the focus to be on the occupation or the environment to enhance participation or occupational performance separately from the person (i.e., intrinsic factors), which may not change or may take a long time to change. In the IPASS-R, participants themselves used the framework to identify barriers and supports to participation by breaking down activities of choice and problem solving strategies to achieve their goals in a social learning environment.

IPASS-R was delivered by a clinical OT and a co-facilitator (a stroke survivor) to a group of four participants over six 45-minute occupational therapy sessions (see Table 2 on page 28 for a description of each session). The participants had all experienced a stroke at least 1 month prior, were at least 18 years of age, and were current patients of a day rehabilitation program. Both the OT and the co-facilitator were experienced in implementing the original IPASS intervention.

Before beginning, the OT administered the Canadian Occupational Performance Measure (COPM; Law et al., 2014), with each participant identifying occupational performance goals. Initial sessions focused on improving participation and independence at home and in the community. After a discussion on supports and barriers to community integration, the group chose a community outing to a restaurant. With support from the co-facilitators, participants identified potential barriers, including accessibility and transportation, and brainstormed solutions. During the final sessions, participants worked on goals related to being productive after discharge from rehabilitation. During each session, participants were asked to make an action plan related to their goals. In between group sessions, they worked on these individualized action plans and reported back to the group. Participants could choose whether to complete their action plan with their OT during an individual therapy session or with family members outside of therapy.

Case Example

Lucy was a 38-year-old single mother who experienced a stroke and started a day rehabilitation program 1 month later. Her parents were able to provide support and childcare for her young daughter while she worked full time as a Human Resources Manager. When she was not caring for her daughter, she enjoyed going to movies and going out with friends. After her stroke, she had significant hemiparesis on her left (nondominant) side and was unable to walk or use her left hand functionally. She needed assistance for some of her ADLs and was dependent on her parents for the IADLs of transportation, cooking, home management, and caring for her daughter. She had not been able to return home after discharge from inpatient rehabilitation; therefore, Lucy and her daughter were living with her parents and she was only leaving the house to come to the day rehabilitation program.

During the COPM, Lucy identified several goals, including being able to independently care for her daughter, independently cook and care for her home, go out to the movies, and return to work. As part of the group, Lucy identified action plans to help her achieve her goals of being independent at home. For example, Lucy had identified that she wanted to cook breakfast for her daughter before school; after a group brainstorming and problem-solving session, she and her OT were able to strategize ways for her to independently and safely cook oatmeal from a wheelchair level by adapting both the task (i.e., instant oatmeal) and the environment (i.e., microwave moved to an accessible height table). Lucy then worked on transferring the strategies she learned from the group sessions to her home, and she was able to report back to the group that she met her occupation-based goal. Throughout the group, her peers and the co-facilitators helped her problem solve strategies for achieving her goals by learning how to modify her environment or change how she was completing a task.

During the community outing, the co-facilitator modeled self-advocacy by requesting reasonable accommodations from the manager of the restaurant for the group to be seated together in a typically inaccessible area of the restaurant. These experiences led to an increase in satisfaction and perceived performance per Lucy's COPM responses and an increased sense of self-efficacy by Lucy to self-manage her participation at home and in the community per the Participation Strategies Self-Efficacy Scale (Lee et al., 2018). Her enfranchisement, sense of choice, and control of her own life also improved, making it easier for her to advocate for herself in the community. Finally, the experience of being in a group with fellow stroke survivors and being co-led by a peer who had also experienced a stroke, helped Lucy develop self-management strategies that she could use in novel situations. For example, Lucy was able to meet a

About the Rehabilitation & Disability SIS

The Rehabilitation & Disability (formerly Physical Disabilities) Special Interest Section (RDSIS) addresses the needs of practitioners who serve individuals with physical dysfunction resulting from a wide range of conditions. The RDSIS also includes the Hand Rehabilitation Subsection for those who address dysfunction of the hand and upper extremity, and the Driving/Driver Rehabilitation Network to educate and support therapists to provide pre-driving screens or driver assessments and training, or to serve as referral sources to appropriate agencies.

- Meet the RDSIS committee members at www.aota.org/RDSIS.
- Join the CommunOT™ discussion at www.aota.org/RDSIS-forum.

Table 2. Improving Participation After Stroke Self-Management Rehabilitation (IPASS-R) Program Sessions

Session	Topics	Activities
Session 1	Introduction to the Stroke Self-Management Group: To introduce participants to self-management and identifying barriers and facilitators to participation in meaningful activities.	‣ Participants learn to define barriers as "inside me" and "outside me" as well as identify strategies to address barriers to meaningful activities. ‣ Participants identify activities they are having difficulty participating in at home.
Session 2	Home Management: To assist participants to use problem-solving steps to increase participation in home activities.	‣ The co-facilitators role-play problem-solving techniques and the participants learn to create an action plan. ‣ Each participant creates an action plan to be completed over the next week and partners up with another participant to provide peer support.
Session 3	Community Participation: To assist and encourage participants to re-engage in meaningful community activities that they had given up after their stroke.	‣ Participants plan an outing of their choice. The co-facilitators assist with problem solving and anticipating barriers. Transportation options, accessibility, and communication are discussed. ‣ Participants reflect on their action plans from the previous week and create a community outing action plan.
Session 4	Group Community Outing: To have participants evaluate their ability to strategize and participate in community activities.	‣ Participants choose a group outing, such as going out to lunch. Potential barriers include lack of accessible transportation, difficulty finding accessible seating, non-accessible doorways, difficulty navigating escalators, reading a difficult menu, and having to walk from a parking garage across the street. The peer co-facilitator models asking for accommodations.
Session 5	Communication Management: To introduce communication skills and scenarios useful for advocating for one's needs and reasonable accommodations.	‣ Participants review barriers from the community outing and learn about asking for accommodations and the Americans with Disabilities Act. ‣ Participants learn ways to communicate with family and friends; role plays are completed by the co-facilitators. ‣ Participants complete a communication action plan.
Session 6	Identifying Meaningful Work: To introduce work as a broader definition and introduce reasonable accommodation and policies for people with disabilities.	‣ Participants brainstorm work goals as a group. Participants are encouraged to consider volunteering, going to school, and engaging in part-time work. ‣ The group is wrapped up by planning a long-term goal that addresses participating in home, community, or work activities.

friend for coffee by planning accessible transportation and developing communication strategies for independently requesting accommodations from the coffee shop owner to seat her and her friend in an accessible location near the bathroom.

Implications for Occupational Therapy Practice

Engaging in occupations and improving participation are at the core of occupational therapy, and these ideals are precisely what stroke self-management programs are seeking to do. OTs can enrich self-management interventions and improve outcomes for people with stroke through our emphasis on and depth of understanding of the person, occupation, and environment and how these domains affect participation. The IPASS-R is one example of how OTs can collaborate with people experiencing stroke to facilitate engagement in meaningful occupations to maintain a healthy life (American Occupational Therapy Association, 2015).

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Heidi Fischer, OTD, OTR/L, is a Clinical Assistant Professor at the University of Illinois at Chicago. She may be reached at hwaldi1@uic.edu.

Sarah Zera, OTR/L, is an Occupational Therapist at Shirley Ryan AbilityLab in Chicago.

Rosetta Robertson is a stroke survivor and community advocate in Chicago.

Danbi Lee, PhD, OTR/L, is an Assistant Professor at the University of Washington in Seattle.

Joy Hammel, PhD, OTR/L, FAOTA, is a Professor and Endowed Chairperson at the University of Illinois at Chicago.

Evidence Supports OT Home Modifications in Reducing Falls For Older Adults

Evidence shows home modifications, when completed in conjunction with an occupational therapist, are effective in improving function and reducing falls among older adults (https://bit.ly/2LnKKdg). Learn more about home modifications in the AOTA Practice Guideline at https://bit.ly/2IVtwWl.

Lighting the Work Environment

Martha Sanders, PhD, MSOSH, OTR/L, CPE

WI

Proper lighting is essential to human circadian rhythms, visual perception, and everyday task performance (Figueiro & Rea, 2017). Occupational therapy practitioners use lighting as an environmental modification to facilitate performance of close visual activities in both the home and the workplace. In such applications, practitioners assess clients' capacities and occupational demands, then identify parameters of the lighting environment necessary to meet their needs.

In the workplace, practitioners address lighting as a means to promote workplace safety, injury prevention, and job task performance. Optimized lighting promotes the visual functioning necessary to meet job demands, particularly in tasks where accuracy, discrimination, and precision are necessary, such as small parts assembly, inspection, reading blueprints, and data entry. Proper lighting may have the strongest influence on task performance when the visual targets (i.e., objects, text) are small and there's low contrast between the targets and the background.

Older workers, in particular, benefit from optimal lighting because age-related changes in the pupil and lens decrease the amount of light reaching the retina (Figueiro & Rea, 2017). Although the contribution of optimized lighting to productivity is not clear cut, studies suggest that good lighting is among the environmental factors that promote a positive mood, an adjustment to shiftwork, and a healthy work environment (Silvester & Konstantinou, 2010; Veitch et al., 2008).

Basic Characteristics of Workplace Lighting

Lighting characteristics that can be modified to improve task performance include the intensity of light (illumination), representation of object colors (color rendering index [CRI]), the appearance of the color of light itself—ranging from warm yellow to cool blue (correlated color temperature), and glare (bright light that projects into a worker's visual field; Kroemer & Grandjean, 2009). Lighting intensity and glare are most easily controlled at the individual level, allowing occupational therapy practitioners the opportunity to educate workers on strategies to modify lighting according to their tasks and body positions.

When lighting systems are designed, *ambient* or general lighting provides the background lighting for a work space. *Localized* lighting provides light for a particular work area, while *task* lighting focuses on the specific work task and can be individually adjusted by workers. In general, as tasks become more precise and last longer, increasing levels of brightness (or illumination) are needed. The farther the work surface is located from the light source, the lower the illumination levels on that surface.

Lumen refers to the amount of light emitted from a light source, whereas *lux* is the measured light intensity at the work surface. The

Table 1. Recommended Illumination Levels According to Visual Demands and Work Tasks				
Visual Performance Description	Typical Applications	Target Illumination (lux) According to Age		
		<25	25–65	>65
Orientation, relatively large-scale, physical (low-cognitive) tasks	Visual performance related to safety, mobility, and security, such as orienting oneself in hallways, stairs, or corridors. *OSHA minimum is 50 lux	15*	30*	60
Visual tasks that include recognition of people, large size, and/or high-contrast	Visual performance requiring attention to the task or people, such as machine work (rough), labeling stock, and basic office work like filing or reception work	100	200	400
Common, relatively small-scale, more cognitive or fast-performance visual tasks	Visual tasks including reading, writing, and using electronic media, such as tasks performed in education/office/ laboratory workspaces, industrial drawing, mechanical work, buffing, or grinding metal.	200–375	400–750	800–1,500
Small-scale, cognitive visual tasks	Visual tasks include close and distant fine inspection, very small detail, high-speed assessment and reaction, such as very fine machine work, detailed drawing and precision assembly.	1,000	2,000	4,000
Extremely minute and/or life-sustaining cognitive tasks	Visual performance is of the highest order in health care and industrial tasks such as surgical procedures or detailed industrial sewing.	1,500–5,000	3,000–10,000	6,000–20,000

Note. Lux=lumens per square meter. Table adapted with permission from the Illuminating Engineering Society of North America (2011; p.4.33).

standard means of measuring illumination levels is a light meter, which can cost anywhere from $20 to $800. A light meter reading is taken on the surface where work is performed. The Illuminating Engineering Society of North America (IESNA) has established recommendations for lighting levels according to the visual performance demands. In the *Lighting Handbook* (10th ed.; IESNA, 2011), optimum illumination level ranges are provided according to age, reflecting that visual needs change over the lifespan (see Table 1).

Determining Lighting for Individuals and Populations in the Workplace

Occupational therapists (OTs) can integrate a specific lighting assessment into their workplace evaluations to provide guidelines for individuals or workgroups. For an individual worker, the lighting assessment can be integrated into a return-to-work evaluation that addresses modifications to facilitate task performance. For workgroups, a lighting assessment can identify lighting needs according to job tasks and form the basis for worker education. Occupational therapy practitioners can also collaborate with lighting designers and employers to address ambient and task light options for workers. Recommendations for workplace lighting parameters are based on the following considerations (Canadian Centre for Occupational Health and Safety [CCOHS], 2013):

- Workers' visual needs (specifically older workers and those with low vision)
- Job task requirements (visual requirements for precision, speed, duration of task)
- Type of work surfaces (matte, glossy, colored, contrast)
- General work environment (ambient lighting, walls, windows)

Although no specific occupational therapy workplace lighting assessment has been developed, a lighting checklist, such as that developed by the CCOHS (2013; see Table 2) can gather feedback on workers' perspectives of their current lighting. Occupational therapy practitioners can measure lighting levels, compare with IESNA recommendations, incorporate worker feedback, and then develop customized recommendations. OTs' knowledge of age-related changes, visual conditions, visual performance, and lighting options enables

Table 2. Checklist for Workplace Lighting		
General Lighting	Yes	No
Enough light available to clearly see the task.		
No troublesome reflections.		
No glare exists along the normal line of sight.		
No frequent transitions needed between light and dark or near and far.		
Lamps are covered to diffuse light evenly and shield bulbs.		
Ceilings and walls have adequate lighting.		
There are no shadows.		
Bright or shiny objects are out of view.		
Lights provide steady illumination (e.g., do not flicker).		
Workers have no complaints of visual strain and/or headaches.		
Office Lighting	Yes	No
Text and images on computer monitor are easy to see and read.		
Task light is available if needed.		
Task light focuses on the task (not on computer screen or keyboard).		
Task light is in the proper location (close to task and on proper side).		
Computer monitors are positioned to reduce glare from windows and overhead lighting (90° perpendicular to window).		
Furniture and equipment have matte finishes to reduce glare.		
Blinds or curtains are available for windows.		
Brightness and contrast controls are properly adjusted on computer monitor.		
Appropriate size print and/or good contrast is available for reading materials.		
Industry	Yes	No
Task lighting AND magnification are available for work with small objects.		
Moving machinery parts are painted a color that contrasts with the background.		
Adequate lighting is available in storage rooms, stairways, and hallways to ensure safety.		
Simple background is located behind tasks for better contrast/discrimination.		

Note. Adapted from the Canadian Centre for Occupational Health and Safety (2013). Used with permission.

them to make recommendations regarding illumination level, lamp position, type of lamp, potential for glare, and worker sitting posture. Occupational therapy practitioners will generally recommend the higher range of illumination for older workers, while ensuring that glare does not impede their line of sight.

Common Workplace Lighting Solutions

Optimized lighting is a combination of natural and artificial light sources at the appropriate illumination levels for the worker. Preliminary reports suggest that cooler, more bluish LED lighting in some environments may promote improved mood, arousal, cognitive performance, and better color recognition than traditional fluorescent lighting (Hawes et al., 2012). In manufacturing environments, extreme temperatures, dust, or moisture may affect lighting needs. In office environments, great variation exists in workers' access to natural light. Common lighting solutions include (Bridger, 2009; Kroemer & Grandjean, 2009):

- *Adequate illumination*. Workplaces should use a layered lighting approach relying on ambient, localized, and task lighting to illuminate work areas. A combination of indirect, diffused area lighting (light directed upward) and frontal task lighting, placed close to the target task, is suggested for precise assembly work.
- *Positioning task light*. To minimize glare, task lights should be below eye level and should have solid lamp shades to eliminate directly viewing the bulb. For writing, task lights should be located on the opposite side of one's dominant hand and slightly forward to minimize shadows.
- *Minimize glare reflections*. Determine the extent of glare by covering the light source and comparing visual details. Position workstations and computer monitors perpendicular to the window. Install adjustable window shades or blinds. Two task lights, positioned on either side of a task, may reduce reflections better than one bright light.
- *Even distribution of light*. Poorly distributed light (bright and dark areas) causes workers to continually adapt to changing visual fields. Create even lighting with more lamps of lower intensity, versus fewer lamps of high intensity.
- *Provide visual contrast*. Enhance contrast by replacing busy backgrounds with solid contrasting color backgrounds. For small piece work, light-colored or shiny objects are better distinguished when placed on dark backgrounds. Consider using lights with cooler temperatures (more bluish color) to optimize contrast.
- *Accurate color rendering*. True representation of colors is rated on a scale from 1 to 100, with greater than 80 being acceptable. CRI ratings are available for all light sources.

Case Example

Juan was a 58-year-old manufacturing worker complaining of headaches, neck pain, and having difficulty smoothing small metal pieces at work. He was referred to the OT, who consulted with the company. The recessed ambient lighting was 350 lux at Juan's workbench, with no natural light. Juan used a head magnifier to see the parts, but he relied on touch to feel all the burrs. A lighting checklist determined that current lighting did not allow him to see detail, no task light was available, and little contrast existed between the small parts and the background. According to the IESNA, the illumination level needed for someone his age to do this job was close to 1500 lux. The OT provided Juan with a 13W compact fluorescent light 1000 lumen task lamp that was positioned to his left (he was right-handed), about 8" from the objects he was manipulating, and slightly forward to minimize shadows. He was given a dark-colored desk pad to contrast with the shiny parts. The OT helped Juan to adjust his seating and posture to a more upright neck and trunk position; now that his visual acuity was clearer, he did not need to excessively flex his neck to view the pieces. The OT educated Juan on taking regular "eye breaks" to minimize fatigue and demonstrated how the location of the lamp affected illumination level. The combined ambient and task light illumination (1350 lux) along with improved visual contrast, upright posture, and regular breaks, increased Juan's ability to remove burrs and work without eye fatigue and headaches.

About the Work & Industry SIS

The Work & Industry Special Interest Section (WISIS) focuses on the distinct role of occupational therapy in assisting people and groups across populations to engage and reengage in the meaningful occupation of work throughout the lifespan. The WISIS is dedicated to understanding the relationship of work to human development, motivation, and performance and supporting occupational therapy practice in a wide variety of settings. The WISIS provides a forum for networking with peers and other professionals, a means to access clinical resources, and a way to share emerging service delivery systems.

- Meet the WISIS committee members at www.aota.org/WISIS.
- Join the CommunOT™ discussion at www.aota.org/WISIS-forum.

Conclusion

Occupational therapy practitioners may affect work performance by identifying individual and workgroup lighting needs as part of an overall plan to promote work performance. Ways to optimize illumination and body position while decreasing decrease glare can promote task performance and reduce eye fatigue for workers with high visual needs.

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Martha Sanders, PhD, MSOSH, OTR/L, CPE, is a Professor of Occupational Therapy at Quinnipiac University in Hamden, Connecticut. She teaches ergonomics and research, and coordinates the Quinnipiac ergonomics program. She consults to local industry in injury prevention. She can be reached at Martha.sanders@quinnipiac.edu.

AOTA Critically Appraised Topic Series: Musculoskeletal Disorders

A Product of the American Occupational Therapy Association's Evidence-Based Practice Project

This Critically Appraised Topic (CAT) is one in a series of systematic reviews summarizing the evidence related to rehabilitation and disability. For more information on the methodology and to read additional CATs in the series, visit http://www.aota.org/Practice/Rehabilitation-Disability/Evidence-Based.aspx.

Focused Question

What is the evidence for the effectiveness of rehabilitative procedures and health fitness interventions within the scope of occupational therapy practice to improve the occupational performance of individuals rehabilitating from severe burns?

Clinical Scenario

According to the American Burn Association, there are approximately 500,000 burn injuries in the United States and Canada each year. Although most are relatively mild, 60,000 require hospitalization each year, and 5,000 a year result in death. In 2011, almost 19,000 people experienced a burn injury on the job (both thermal and chemical burns), according to the Bureau of Labor Statistics (http://www.paradigmcorp.com/resources/injury-specific-learning/burn-injury).

Burns occur when chemicals, flames, liquids, steam, or electricity damage skin and tissue. Severe burns typically affect more than just the skin. Burns can shut down or weaken vital systems, putting the injured worker at greater risk for multiple complications. Depending on how extensive the area of burn is, virtually every system in the body may be affected (http://www.paradigmcorp.com/resources/injury-specific-learning/burn-injury).

Major burn complications include disfigurement, scarring, infection, psychological issues, chronic pain, muscular weakness, limited range of motion, decreased grip and pinch strength, and difficulties resuming life roles and participation in activities of daily living. Occupational therapy practitioners play a key role in the rehabilitation of burn victims, helping them to recover muscle strength, joint range of motion, fine motor skills, and the ability to perform activities of daily living, along with providing key adaptive equipment and aids to enable independent living.

The purpose of this systematic review is to assist occupational therapy practitioners in making informed decisions regarding evidence-based intervention approaches and specific rehabilitation techniques to improve occupational performance for individuals recovering from severe burns.

Summary of Key Findings

Summary of Levels I, II, and III

Two Level I, three Level II, and two Level III articles were included in this review. Themes included individualized and supervised health fitness rehabilitation with provision of patient and family education, frequently provided and intense inpatient rehabilitation, early versus late skin grafting for hand burns, and exercise with and without orthotic intervention for axillary burns.

Individualized, Supervised, and Intensive Health Fitness Rehabilitation, Including Patient and Family Education (Strong Evidence)

Three Level I studies (de Lateur et al., 2007; Ebid, Omar, & El Baky, 2012; Okhovatian & Zoubine, 2007) showed that providing aerobic conditioning in combination with standard therapeutic interventions for individuals recovering from severe burns is superior to providing standard therapeutic interventions alone. Patients gained aerobic capacity and muscle strength.

Frequently Provided Inpatient Rehabilitation (Moderate Evidence)

One Level I study (Okhovatian & Zoubine, 2007) showed that intense inpatient rehabilitation provided to patients rehabilitating from severe burns, offered two to three times a day for 30–45 min, with the addition of electrical stimulation for strengthening of muscles, was superior to routine therapy offered once a day for 15–20 min for patients recovering from burns. Intense inpatient rehabilitation also resulted in decreased complications and a significantly decreased number of burn scar contractures. Patient and family education was included on a daily basis in the individualized patient treatment approach.

One Level III prospective longitudinal study (Schneider et al., 2012) showed that inpatient therapy offered to patients recovering from significant burns 3 hr per day, three times per week, resulted in significant improvements in all outcome measures (i.e., range of motion at the shoulder, elbow, knee, and hip; the Berg Balance Scale; and the Jebsen Taylor Hand Test), assessed both at admission and at discharge. In addition, contracture management was achieved without surgical intervention.

Splinting and Exercise for Axillary Burns (Moderate Evidence)

One Level I randomized clinical trial (Kolmus, Holland, Byrne, & Cleland, 2012) showed that exercise alone was a reasonable approach to the treatment of axillary burns, because adherence to an orthotic management regimen was poor and no significant differences were noted between the two patient groups (one group used an orthosis and performed exercises, and the other group only performed exercises).

Early Excision and Grafting Versus Delayed Skin Grafting (Moderate Evidence)

A Level I randomized clinical trial (Omar & Hassan, 2011) showed that early excision and grafting of eschar, on average, 6 days after hand burn was superior to skin grafting applied, on average, 16 days after hand burn. Therapy was initiated at 1 week after skin grafting in both groups. There was a significant increase in finger total active motion measures, functional ability, and grip strength in the early excision group, and the hospital duration for these patients was shorter.

Survivors of Severe Burns and Quality of Life Issues (Limited Evidence)

One Level III cross-sectional study (Xie, Xiao, Zhu, & Xia, 2012) looked at long-term quality of life issues in survivors of severe burns (total body surface of 70%). Results of this 12-year study of 20 severely burned patients showed lower overall scores in physical functioning (as measured by the Short Form 36 Medical Outcomes Survey, the Michigan Hand Outcome Questionnaire, and the Brief Version of Health Specific Burn Scale), as well as role limitations due to physical and emotional problems and deficits in social functioning. Length of hospital

stay and the time frame between injury and eventual return to work date affected quality of life scores for these patients. Some of the patients were unable to continue with rehabilitation programs after discharge. Therefore, it is imperative to initiate rehabilitative procedures and discharge planning as early as feasible. Patients who were able to return to work demonstrated improved scores of overall hand functioning.

Bottom Line for Occupational Therapy Practice

The strongest evidence exists for frequent, individualized, and supervised inpatient rehabilitation programming for individuals rehabilitating from severe burns. Occupational therapy practitioners should consider providing inpatients with burns with rehabilitation programming and aerobic conditioning sessions several times per day. Occupational therapy practitioners should consider including patient and family educational sessions as part of a comprehensive intervention plan for these patients.

There is moderate evidence that axillary burns can be managed by exercise alone and that orthotic intervention is not necessary.

There is moderate evidence that early excision and grafting of eschar in hand burns is superior to late skin grafting. Occupational therapy practitioners can initiate therapeutic interventions and functional activities earlier, and patients do better in terms of improved function, grip strength, and range of motion, with decreased hospital stays.

There is limited evidence that patients who are able to return to work after severe burns have better scores on hand function and quality of life evaluations. Occupational therapy practitioners can initiate return-to-work assessments and appropriate discharge planning early on in the rehabilitation process to better enable patients with severe burns to progress toward maximal recovery and occupational performance.

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Resources

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Paradigm Outcomes. (n.d.). *Burn injury*. Retrieved from http://www.paradigmcorp.com/resources/injuryspecific-learning/burn-injury

This work is based on the evidence-based literature review completed by Deborah A. Schwartz, OTD, OTR/L, CHT.

Evidence Supports Education to Prevent and Treat Back Injury

Evidence supports various back school and education approaches in the prevention and treatment of back injury, pain, and disability (https://bit.ly/2IZbcvi). To provide best practice to clients with musculoskeletal conditions, take a look at the *Practice Guidelines for Adults with Musculoskeletal Conditions* at https://bit.ly/2GFXsR4.

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