Cases in Pediatric Occupational Therapy Assessment and Intervention

Instructor’s Manual

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Introduction

This guide is intended to support course instructors in occupational therapy education programs who have elected to use *Cases in Pediatric Occupational Therapy: Assessment and Intervention*.

We hope that these supplemental materials will assist you as you prepare your students to work through the cases in the primary text. The different types of supplemental materials found in the *Instructor’s Manual* include test questions, additional background information, additional photographs, and follow-up information. The information included in this *Instructor’s Manual* is not prescriptive. Rather, it is intended to serve as a guide for instructors as they develop their courses.
The Neonatal Intensive Care Unit

Jaylene: Prematurity/Neonatal Intensive Care Unit

Jennifer J. Hofherr, MS, OTR/L, C/NDT

Progress Information

The OT continued to see Jaylene and collaborated with her nurses, doctors, and parents two to three times a week. Every 2 weeks, the OT completed a formal NIDCAP observation and updated her care plans and progress toward the functional goals identified as necessary criteria for discharge. Jaylene’s hospitalization was complicated by persistent difficulty stabilizing her breathing and she was on and off of the ventilator and oxygen for many weeks. She also had difficulty digesting her food. At 37 weeks gestation, Jaylene had surgery to correct a stricture found in her bowel. After this surgery, Jaylene improved quickly, going home finally 1 week after her due date on April 29th. Throughout the hospitalization, Irene and Paul were regularly at her bedside doing skin-to-skin care and solidly supporting each other and Jaylene through the difficult weeks. Irene was able to provide breast milk for Jaylene until right around the time of her surgery. At that point, the limited supply that Irene was producing felt too overwhelming for her to continue to pump and worry about how much she was able to bring to her each day. The OT empathized with her struggle and together they made a new plan for helping Jaylene learn to eat by the bottle after she recovered from her surgery.

At the time of discharge, Jaylene continued to enjoy relaxing with her mother and was beginning to make eye contact and alert herself in response to her mother’s cues. Irene was extremely responsive to Jaylene’s signs that she was either ready for interaction or that she needed a rest.

When not with her parents, Jaylene tended to be very tense and sensitive to the sounds and activity in her environment. She fed by bottle well enough, but often appeared to be overwhelmed by the sensations of sucking and of the milk digesting within her stomach. Jaylene was enrolled in early intervention at the time of her discharge to home due to her very low birth weight and some concerns about her variable tone and sensory sensitivity. Jaylene and her parents returned to the NICU follow-up clinic at 2 months, 4 months, 6 months, and 12 months corrected ages. By the 2-month visit, Jaylene had grown significantly better than she ever had in the hospital and at each visit she appeared to be thriving and developing normally. Irene recalled her time in the NICU as a challenge, but one that made her stronger. Irene said, “Jaylene needed me and now I know that I can do anything. I will always be here for my baby.”

Maya: Premature Infant/Neonatal Intensive Care Unit

Maureen Connors Lenke, OTR/L

Additional Follow-Up Clinic Visits

NICU Follow-Up Third Visit

Maya was seen for her third NICU follow-up visit at 12 months, 9 days, with an adjusted age of 8 months, 26 days.

Maya’s physical exam revealed that she weighed 15.4 lbs (7 kg) and her height was 25.25 inches (64 cm). Her weight was in the 10th percentile, her height was in the second percentile, and head circumference was in the fifth percentile.
Maya was reevaluated with the Alberta Infant Motor Scale (AIMS). She made significant progress since her last visit. She scored at the 25th to 50th percentile on the AIMS with skills appropriate for her adjusted age. Maya was taking pureed foods from a spoon. She raised her arms to be picked up and responded playfully to her mirror image. Maya enjoyed playing peek-a-boo and could uncover a hidden object. She was able to grasp two cubes with a radial digital grasp, transfer a cube, and combine objects at midline. She was able to actively reach for toys. Maya exhibited a pincer grasp of finger food with either hand. She actively reached for and grasped toys. She was able to sit independently with good stability when placed. She was not yet transitioning in and out of sitting. Maya was beginning to commando crawl in prone. She was able to maintain quadruped briefly when placed. She was able to stand with one-hand support.

**NICU Follow-Up Clinic Fourth Visit**

Maya attended her fourth NICU follow-up clinic at a chronological age of 18 months, 9 days, with an adjusted age of 14 months, 26 days. She experienced a viral rash since her last visit, but had no other illnesses or hospitalizations. She was eating table foods. Maya’s physical exam revealed that she weighed 17.5 lbs and her height was 28.5 inches (72.5 cm). Her weight was plotted in the 10th percentile, her height was in the 10th percentile, and her head circumference was at the fifth to 10th percentile. Her growth and development were appropriate for her corrected age.

Maya was assessed using the fine motor and gross motor scales of the Mullen Scales of Early Learning (Mullen, 1995). Maya scored at the 13-month level for fine motor development and 11-month level for gross motor skills. Maya was social and engaging and demonstrated simple pretend play. She extended and released a toy to others and explored her environment. She played peek-a-boo and a reciprocal game with a ball briefly, enjoyed music, and moved to a rhythm. Maya exhibited a neat pincer grasp bilaterally. She banged in play and clapped her hands at midline. She was able to actively release a cube into a container and attempted to stack two cubes. She turned pages in a book and looked at and touched the pictures. Maya nested two to three nesting cups, pulled a string to obtain a toy, and could uncover a hidden toy. Maya ate table foods without difficulty. She primarily used her fingers to feed herself, but attempted to use a spoon. She drank from a sippy cup and a straw. Maya crept in quadruped and pulled to standing through half kneeling. She could lower herself with control to the floor. She was able to cruise furniture. She was not yet standing independently or taking steps independently. However, she did take steps forward with two hands held.

**NICU Follow-Up Clinic Fifth Visit**

Maya attended her fifth NICU clinic at 22 months, 5 days, with a corrected age of 18 months, 22 days. She was on no medications and had no hospitalizations or illnesses since her last visit. Her mother described her as “easy going and content with a good disposition.” Maya’s physical examination revealed that she weighed 20.5 pounds (9.3 kg) and was 30 7/8 inches (78.4 cm) in height. Her weight was plotted in the 10th to 25th percentile, her height was at the 25th percentile, and her head circumference was at the fifth to 10th percentile.

Maya was assessed using the gross motor and fine motor scales of the Mullen Scales of Early Learning. Maya scored at the 18-month level for gross motor skills and 20-month level for fine motor skills on the Mullen. She was a social happy child who liked praise and attention. She was interested in other children, observed their actions, and imitated adult behavior, such as talking on the phone and doing chores. Maya communicated using single words (five to eight words), gestures, and pointing. She imitated words and sounds and made a few animal noises and environmental sounds. She identified eight body parts and pointed to four to seven pictures of familiar objects. She loved music and dancing, liked being read to, and could place a circle in a simple puzzle. She was able to turn pages of a book singly and isolate her index finger for pointing. Maya could imitate vertical strokes with a crayon. She was able to grasp a plastic coin and place it into a horizontal slot in a play bank. She was able to stack a tower with five 1-inch cubes using a radial digital grasp and controlled release. Maya was able to walk independently and attempted to kick a ball. Her mother was given guidance regarding toys to continue to promote her fine motor and movement skills. Maya was beginning to participate in a mom and tot class through the local park district with other children and families. Her parents were very pleased with her progress.

**Questions to Consider**

1. During Maya’s second visit to the NICU follow-up clinic, her mother was provided with handouts that provide instructions related to encouraging side sitting during play and reaching for toys in prone. How will these positions support Maya’s overall development? What are some examples of activities she could engage in or toys that she could play with while in these positions?

2. During Maya’s second visit to the NICU follow-up clinic, Maya’s mother was given suggestions to continue to promote independent standing and walking, as well as recommendations for toys to continue to promote her fine motor skills. What are some ways that OT could support the development of standing and walking? What are some examples of age-appropriate toys that Maya could play with in order to support her fine motor development? What other activities might Maya participate in that would support her fine motor development?
3. What are the key characteristics of the Mullen Scales of Early Learning? What are the age ranges associated with this assessment? What are some examples of different items? Why would an OT choose this assessment tool over another one?

Reference


Resource


Pablo: Premature Infant/Neonatal Intensive Care Unit

Sonia F. Kay, PhD, OTR/L and Marvieann Garcia-Rodriguez, MHS, BHS, OTR

Learning Activities

1. Go to the AOTA website. Describe the requirements for an occupational therapist working in the NICU in terms of knowledge, skills, and experience. (In order to access this document, the student will have to be a member of AOTA. http://www.aota.org/practitioners-section/children-and-youth/highlights/39462.aspx?ft=pdf)

2. Using the principles of family-centered care, what further information does the occupational therapist need to find out from the family and other staff members? What are some ways that the occupational therapist might be able to do this? What other team members will the OT need to collaborate with to maximize the effectiveness of therapeutic interactions?

3. In small groups of five, students will analyze the use of the following frames of reference in the case. Use the following grid for the analysis:

<table>
<thead>
<tr>
<th>Frame of Reference</th>
<th>Example from the case</th>
<th>Rationale for FOR use</th>
<th>Relationship to occupation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Neurodevelopmental FOR</td>
<td></td>
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<tr>
<td>Sensory Integration FOR</td>
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<tr>
<td>Coping FOR</td>
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<tr>
<td>Biomechanical FOR</td>
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</tr>
</tbody>
</table>

Test Questions

1. Rafael was born at 28 weeks gestation with Apgar scores of 3 (1 minute) and 10 (5 minutes). What do these scores indicate?
   a. The health care professional was not very reliable in scoring Rafael
   b. Rafael is at risk for serious complications due to low scores
   c. Rafael experienced some birth distress but is now fine
   d. Rafael’s scores are within the typical range

2. A premature infant may have many medical complications. It is important that, when you are working with a child in the NICU, you understand the initials that stand for some of these conditions. Johnny experienced BPD. This disorder could lead to which of the following problems?
   a. Difficulty with respiration and endurance
   b. Difficulty with digestion
   c. Difficulty with visual receptive skills
   d. Difficulty with posture and tone

3. Which of the following disorders could directly result from a Grade IV intracranial ventricular bleed?
   a. Cerebral palsy-spastic diplegia
   b. Orthopedic abnormality
   c. Sensory processing disorder
   d. Oral motor problems

4. You are in the NICU and you notice that there is a premature infant who is somewhat yellow and is under some bright lights. What complication does this child have?
   a. Yellow fever
   b. Gastrointestinal malformation
   c. Hyperbilirubinemia
   d. Sepsis

5. Which of the following describes the occupational therapist’s role in the NICU?
   a. Decrease sensory stimulation to all infants in order to protect the nervous system
   b. Create stimulating sensory environments for all neonates
   c. Collaborate with all staff to provide family-centered, developmentally appropriate, individually based care
   d. Position all neonates in supine to increase anti-gravity flexion

6. Which behavior is a sign of stress in premature infants?
   a. **Finger splaying**
   b. Relaxed limbs
   c. Eyes open
   d. Sucking

7. Premature infants under 32 weeks gestation generally benefit from proper positioning in the NICU. Which of the following is not a goal of the positioning?
   a. **Facilitate extensor tone of the extremities**
   b. Facilitate flexor muscle tone of the extremities
   c. Increase oxygen use in respiration
   d. Promote shoulder and pelvic development

8. Research has shown that the sound inside of the incubator can be quite loud. Staff now are attentive to sounds that are produced in care. Which of the following is a recommended auditory stimuli for a premature infant?
   a. Classical music with violins
   b. **Recording of parents’ voices**
   c. Sounds from nature
   d. None

9. One of the roles the occupational therapist may have is to determine when to assist in developing oral motor control for sucking. During this process, which of the following indicators signals the therapist should stop?
   a. Cooing and smiling
   b. Eyes wide open
   c. **Increased respiration and heart rate**
   d. Quiet alert state

10. Which of the following is a goal of developmental intervention?
    a. Facilitate development of self regulation
    b. Reduce stress and agitation
    c. Promote CNS development
    d. **All of the above**
Follow-Up Information

Initial Considerations

Before beginning the play dates, the occupational therapist had a few concerns. She wondered if language would be an issue given that Royce’s grandmother did not speak Spanish and the twins’ mother was not in the habit of speaking English. The language barrier was quickly overcome as the families became more comfortable with one another. The twins’ mother proved she was able to communicate in English well and became increasingly comfortable making this effort. Another concern the occupational therapist had was whether the children would be a good match for a play date, given the varying abilities and interests among them. Once the three started coming together, it was obvious that, despite the differences in the children’s abilities, coming together was exciting and meaningful for all of them. Royce’s grandmother and the twins’ mother were involved and responsive to the varying needs of the twins and Royce during sessions. They both took initiative in offering ideas for play when it was their turn to host. Caregiver support and investment proved key in the success of the play dates.

Overall Benefits

There were many benefits to bringing the two families together. Among the main benefits were the following:

- The children learned new skills and gained interests from observing one another.
- The play dates provided opportunities for the families to create play routines and for the children to engage in new play ideas. The children learned to anticipate different activities at each setting. This mix of novelty and routine facilitated Royce’s ability to participate with greater intentionality in play schemes. She timed “falling down” at the end of Ring-Around-the Rosie, tossed the ball when playing catch, and took her turn stacking blocks.
- The families formed a lasting friendship. The families maintained the relationship even after their time in EI ended. The children attended one another’s birthday parties and came together to play on breaks from school.

Unexpected Outcomes

One of the surprises of these play dates was how quickly the twins adjusted to Royce. By the end of the first play date, they showed no anxiety about her presence and, in fact, genuinely sought out ways to interact with her. Also, all of the children displayed aspects of their personality that were unseen in individual therapy sessions. For example, the twins who so often fought and competed for toys when alone, would become gallant when Royce was present, offering hugs, toys, and attempting to point out interesting things to her. Likewise, Royce, who was typically easy-going with frequent displays of affection, showed her ability to defend her property when the twins came to her home. She “guarded” her kitchen cabinet by holding her hand over it to prevent the twins from opening it. These seemingly minor behaviors were hugely significant because they reflected both a level of awareness of the social context and an ability to produce an appropriate response to that context that was typically not demonstrated by the children. These were examples that proved that the play dates in the children’s natural environments offered a “just-right” challenge for all three children and provided opportunities for the families to share everyday activities with each other.
Tommy: Sensory Dysmodulation and Dyspraxia/Early Intervention

Kimberly Bryze, PhD, OTR/L and Roberta K. O'Shea, PT, DPT, PhD

Learning Activities

1. Group discussion: The Short Child Occupational Profile (SCOPE) assessment provides a measure of how the social environment may support or hinder occupational performance. Provide an example from your own life that illustrates how your social environment may have either supported or hindered your participation in an occupation. Can you provide an example of where you were part of a social environment that facilitated or hindered to occupational performance of someone else?

2. Group discussion: Learning about childhood roles:
   a. In a group discussion, begin with answering the question, what roles do children have? Then, develop a list of behaviors and occupational tasks that are associated with the child roles identified.
   b. Assign group members different settings to observe typically developing children and record the roles, role behaviors, role expectations, and associated occupations observed. In a future class meeting, share this information and modify your previous list.

Test Questions

1. Which Model of Human Occupation (MOHO) concept would be used to describe and address the concerns of child who shows little interest in exploring his or her environment?
   a. Volition
   b. Habituation
   c. Performance skills
   d. Occupational environment

2. According to MOHO theoretical concepts, why might a child show little interest in exploring objects and/or the environment?

3. How would a therapist using the Sensory Integration perspective explain a child’s lack of interest in play exploration?

4. What is the purpose of the SCOPE assessment? How does it differ from other MOHO-based assessments?

5. Using MOHO/SCOPE terminology and concepts, explain the relationship between the environmental concept of occupational demands and volition.

6. You have just completed an assessment, and have determined that a 3-year-old boy likely has a sensory processing disorder. The parent asks, “What is a sensory processing disorder?” Provide your explanation below.

7. A parent reports that their child tantrums when it is time stop an activity and when it is time to leave one place and go to another. Which MOHO concept is described by the parent?
   a. Volition
   b. Habituation
   c. Performance skills
   d. Occupational environment

8. A therapist is using the SCOPE to guide an initial evaluation on a young child. The therapist is immediately aware that the child shows little interest in toys and activities that usually appeal to this age group. Which assessment would best augment the therapist’s data to guide SCOPE ratings and future intervention planning?
   a. Interest Checklist
   b. Pediatric Volitional Questionnaire (PVQ)
   c. Model of Human Occupational Screening Tool (MOHOST)
   d. Child Occupational Self-Assessment (COSA)

9. During an occupational therapy assessment, the parents report that their child cooperates with toileting at home. However, when in the community, the child is not able to initiate the familiar routine and steps for toileting. This discrepancy would be noted in which section of the SCOPE assessment?
   a. Process skills: orientation to the environment
   b. Habituation: routines
   c. Environment: family routine
   d. All of the above

10. A child demonstrating difficulty with imitating the actions of others, or generation of ideas on how to use objects is demonstrating difficulty with which SCOPE/MOHO concept?
    a. Process skills
    b. Habituation
    c. Volition
    d. Environment
Chapter 3

Introduction to School Systems

Denny: Autism and Attention Deficit Hyperactivity Disorder/ School Systems

Meghan Suman, MS, OTR/L, BCP

Denny's SFA scores.
(continued)
Donovan: Emotional Disturbance/Middle School

Heather Roberts, MHA, OTR/L

Learning Activities

2. Working in a small group, make a list of other standardized assessment tools and nonstandardized methods that could be used in the school setting.

Test Questions
1. What law entitles children with disabilities to receive special education?
   a. IDEA
   b. MDCP
   c. Title 9
   d. TEA

2. Occupational therapy in the schools is described as a
   a. Required service
   b. Primary service
   c. Related service
   d. Cooperative service

3. Which of the following professionals can provide occupational therapy services in the school? (Multiple answers)
   a. Orientation and Mobility specialist
   b. Occupational Therapist
   c. Certified Occupational Therapist
   d. Adapted Physical Education Teacher

4. What does IEP stand for?
   a. Independent Education Program
   b. Individualized Education Program
   c. Interesting Education Program
   d. Individualized Exceptional Program

5. Which of the following would an OT NOT treat in the school?
   a. Difficulties tying shoes
   b. Problems modulating noise levels in the classroom
   c. Splinting a broken finger
   d. Working on an anti-bullying committee

6. Which of the following would be an appropriate standardized measure to use in the school setting?
   a. School Function Assessment
   b. Beery VMI
   c. Sensory Processing Measure
   d. All of the above

7. Who might the OT interview as part of the evaluation process?
   a. Child
   b. Teacher
   c. Child, parent
   d. Child, teacher, parent

8. What recommendations would be appropriate for the OT to make in the school setting for this case? (Multiple answers)
   a. Seating placement in art class
   b. When to take medication
   c. Keyboarding programs to improve typing skills
   d. Integrating timed breaks in the schedule to reduce anxiety

9. Where is the best place to provide occupational therapy services?
   a. Outside the classroom in a designated “OT area”
   b. On the stage of the gym
   c. In the classroom with the teacher observing
   d. In the hallway

10. Which of the following are areas you would want to assess?
    a. Independence with changing into PE clothes
    b. Ability to open locker and gather supplies
    c. Time and quality of copying from the projector
    d. All of the above

Resources


http://www.aota.org/~/media/Corporate/Files/AboutOT/consumers/Youth/ParentsBrochure.ashx


Kendra: Cerebral Palsy
Robin Elaine Fogerty, OTD, OTR/L; Meagan E. Wisniewski, BS; and Patricia Bowyer, EdD, MS, OTR, FAOTA

Learning Activities:
1. Group discussion: Provide an example from your own life experiences where your feelings of personal causation supported your occupational participation. Provide an example of when it hindered your ability to participate. Describe your experiences using MOHO theoretical concepts; be sure to include how the occupational environment may have influenced your feelings of personal causation and/or ability to participate.

2. Group project/discussion: Explore therapy catalogues, Internet, and OT trade magazines/journals, then brainstorm through discussion to generate a list of possible adaptive devices and techniques (including one-handed techniques) that could be used with Kendra at school and home. Also discuss strategies to improve Kendra’s acceptance of doing things differently from her peers (e.g., using an adapted device).

Test Questions
Vignette 1: A teacher reports that a student with mild cerebral palsy frequently “melts down” during art. The teacher has observed that the student used to attempt art tasks but became
very frustrated due to her motor impairments. Now the student tend to cry, shut down, and/or state that “art is stupid.”

1. Hypothesize about what is happening in this scenario using MOHO/SCOPE terminology and rationale.

2. Based on your hypothesis, provide two possible intervention strategies using MOHO/SCOPE rationale.

Vignette 2: As a therapist working in a school setting, you suggest a visual token board to help a child complete less desirable tasks. The child will earn tokens for participating in less preferred tasks. Once the token board is full, the student will gain access to a highly preferred task.

3. Using MOHO terminology and concepts, explain the therapist’s possible rationale for this recommendation.

4. When the OT makes the recommendation for a visual token/reward system, the teacher states that this will never work in her classroom. The teacher believes that this is not fair to the other students. The teacher states that the student should just complete work when he or she is instructed, just like everyone else.

   ◊ Do you think this observation is important information to capture during an occupational therapy assessment? Why or why not?

   ◊ In which area of the SCOPE assessment/intervention plan would this information be recorded?
   (Answer: Social environment)

5. A child presents with spasticity in right upper and lower extremities. Which of following is the most likely diagnosis for this child?
   a. Diplegic cerebral palsy
   b. Hemiplegic cerebral palsy
   c. Athetoid cerebral palsy
   d. Spastic quadriplegic cerebral palsy

6. A child with cerebral palsy is receiving an initial occupational therapy evaluation. The therapist is conducting an observation to score the SCOPE assessment. The therapist notes that the child has not yet mastered the motor skills required for several classroom tasks presented during the session. Where would the therapist record this information on the SCOPE assessment and intervention plan?
   a. Motor Skills
   b. Process Skills
   c. Environment: Physical Resources
   d. Environment: Occupational Demands

7. Which of the following is a MOHO-based assessment that provides strengths based information about a child’s overall participation in valued roles, and the occupations associated with them?
   a. Short Child Occupational Profile (SCOPE)
   b. Pediatric Volitional Questionnaire (PVQ)
   c. Model of Human Occupational Screening Tool (MOHOST)
   d. Child Occupational Self-Assessment (COSA)

8. An occupational therapist is in the process of completing an initial evaluation with a student who demonstrates strength in verbal abilities and weakness in motor skills. The therapist understands the teacher’s priorities for the student from conducting teacher interviews and classroom observations. The therapist would like to better understand the student’s perspective and priorities. Which assessment tool would best facilitate this need?
   a. Short Child Occupational Profile (SCOPE)
   b. Pediatric Volitional Questionnaire (PVQ)
   c. Model of Human Occupational Screening Tool (MOHOST)
   d. Child Occupational Self-Assessment (COSA)

9. Match the following items to SCOPE environment sections:
   a. Physical Space
   b. Physical Resources
   c. Social Groups
   d. Occupational Demands
   1. A classroom assistant feeds a child to save time
   2. A safe and accessible bathroom
   3. Adapted electric scissors
   4. Child unable to play because rules do not accommodate for one-handed techniques

   (Answer: a = 2, b = 3, c = 1, d = 4)

10. An OT writes the following goal: Student will persist in art activities for 30 minutes, without expressing upset. What SCOPE/MOHO area is addressed by this goal?
    a. Process Skills: Plan and make decisions
    b. Environment: Occupational Challenge
    c. Habituation: Routines
    d. Volition: Response to challenge
Introduction to Outpatient Services

Brad: Brain Tumor/Outpatient

Kendall Carithers, OTR and Lauro A. Munoz, OTR, MOT, CHC

Learning Activities

1. Have two people play out the role of mother and therapist. Break into small groups and discuss Brad’s difficulties with occupational participation. Then, as a class, review what each small discussion group decided.

2. Have groups examine what indicators would be best to look at when deciding what is the appropriate time to tell parents, or caregivers, that their child may not compare to the norm and focus on the child’s strengths versus the remediation of skills he or she may not attain. How can the therapist help parents begin to think in terms of lifetime skills sets and transition to adulthood?

Test Questions

1. Developmental theory was the only critical portion of this child’s treatment plan? True or False

2. Documentation in other disciplines’ notes informed of homonymous hemianopia. It is important for the OT to continue evaluation for it within the context of play. True or False

3. If precautions are not written on the referral but you assumed that there may be precautions, which of the following actions would you take?
   a. Continue without action
   b. Ask mother what precautions are
   c. Contact the physician

4. Which sets of context would be effective in treating this child?
   a. Home
   b. Therapy gym with modifications
   c. Doctors office with modifications
   d. All of the above

5. Which of the following would you do in treating a child with flaccid hemiplegia?
   a. Begin with remediation technique
   b. Begin with adaptive technique building on the child’s available strengths
   c. Combination of both

6. What would you do if the child presents to therapy with lethargy and nausea?
   a. This could be an indicator of shunt malformation; therefore, contact the child’s physician
   b. Children often get sick, so see what the child could do in therapy
   c. Send the child home and ask him or her to return when he or she feels better
   d. Recommend immediate transport to emergency room
   e. Both a and d

7. Client factors and occupational performance are the only aspects that would be important in the child’s treatment plan. True or False (occupational participation is the key indicator)

8. Which of the following are needed for evaluating a child?
   a. Occupational participation
   b. A full client factor assessment
   c. Occupational performance
   d. Context of performance
   e. Previous roles and routines
   f. A, C, D, E
9. Best practice is for the caregiver to be involved in therapy delivery and to carry out interventions in the home environment. True or False

10. It is important to have one frame of reference such as MOHO guiding the therapy plan. True or False

Nadir: Motor Disorder/Outpatient Rehabilitation

Carly Thom, MA, OTR/L

Learning Activities

1. Recall from the case study that Nadir is 6 years old and is currently not receiving any educational services. Look up the laws regarding education in your local school district. Are Nadir’s parents breaking the law by not sending him to school? Based upon local laws, make a list of at least three options for Nadir’s parents to pursue so that his educational needs are being met.

2. The case study reported that Nadir has had a G-button placed, though his parents are not currently using this and prefer to feed him orally only. Also recall that Nadir is described as being very thin. Research the height/weight norms for a 6-year-old child. Based upon the case study description, Nadir does not fall within these norms and is likely not receiving adequate nutritional intake. Next, research what the suggested caloric intake is for a child Nadir’s age. Design a balanced diet (based upon suggestions from ChooseMyPlate.gov) that you might be able to provide to Nadir’s parents. Also include suggestions for “calorie-boosters” that they might include.

Test Questions

1. According to the case study, Nadir exhibits an intact ATNR reflex. At what age does this reflex typically become integrated?
   a. 12 months
   b. 6 months
   c. It does not typically become integrated
   d. 3 months

2. Based upon information in the case study, in what position would you recommend for Nadir’s parents to feed him?
   a. In his car seat since it is familiar to him
   b. In his mother’s lap since that is where he sits most of the day
   c. In supine so that he will become more acclimated to tolerating this position
   d. In his supportive Kimba seating system

3. In prioritizing your approach to Nadir’s treatment, which of these problem areas are most salient with respect to Nadir’s safety?
   a. Addressing his car seat—he is at risk for falling out while riding in the car because his car seat is too small
   b. Addressing his reflux—he is at risk for increased tooth decay if it continues
   c. Addressing his education—his parents are breaking the law by not putting him in school
   d. Addressing his sensory system—he needs to be able to tolerate a supine position so that he can get adequate sleep at night

4. Which of the following areas of intervention would NOT be included in the occupational therapy intervention plan for Nadir?
   a. Positioning
   b. Ambulation
   c. Visual attention
   d. Nutritional intake

5. Nadir is unable to roll from supine to side lying. At what age do infants typically develop this skill?
   a. 3 to 6 months
   b. 1 month
   c. 9 to 12 months
   d. 12 to 15 months

6. Based upon the case study, positioning plays a big role in Nadir’s care. What positioning would be most beneficial for his occupational therapy treatment sessions?
   a. Supine, in order to work on building tolerance for this position
   b. Supported in his Kimba chair, in order to work on visual tracking and attention
   c. Prone on elbows, to build neck/core strength
   d. All of the above
7. Based upon Nadir’s current functional level, which of the following intervention areas would you choose to target in order to utilize his strengths?
   a. Placing him in varying positions so that he will acclimate to them
   b. Focusing on rolling from supine to side lying since this is a basic skill
   c. Utilizing musical/sound-making toys to capitalize on his preferences and increase his visual orientation
   d. Putting him on the swing to increase his vestibular tolerance

8. Taking into consideration Nadir’s reflux, what sleeping position would you recommend for him?
   a. Prone
   b. Side lying
   c. Supine
   d. Supine with a wedge at least 30 degrees or more

9. When approaching assessment with Nadir, which of the following would be recommended?
   a. Utilizing a basic approach focusing on reflex assessment
   b. Utilizing a strengths-based approach focusing on Nadir’s strengths and how they can be incorporated in treatment
   c. Utilizing a standardized assessment regardless of Nadir’s functional level, since they are the “gold standard”
   d. Taking detailed measurements of Nadir’s range of motion and strength utilizing goniometry and manual muscle testing.

10. Which of the following pediatric assessments would be appropriate for use with Nadir, given his functional level?
    a. The Beery-Buktenica Developmental Test of Visual-Motor Integration (Beery VMI)
    b. The Bayley Scales of Infant and Toddler Development
    c. The Miller Assessment for Preschooler (MAP)
    d. The Short Child Occupational Profile (SCOPE)

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Renee: CHARGE Syndrome/Outpatient

Leon Washington, OTR, PhD, LMSW, C/NDT

Learning Activities

1. First activity (at least two people): This activity is meant to provide an opportunity to experience vestibular input through rotary movement. It is important to observe for post-rotary nystagmus (PRN) rapid back and forth eye movements following rotary movements.
   
   **Counter clockwise (sitting position)**
   - Sit on a rotary board (or platform swing) with eyes closed and legs crossed
   - Keep head in a slight flexed position (may help to place a small object under chin)
   - Rotate counterclockwise for 10 repetitions (one turn every 2 seconds)
   - Stop rotations
   - Make sure the person keeps their eyes closed and note PRN

   **Clockwise (sitting position)**
   - Sit on a rotary board (or platform swing) with eyes closed and legs crossed
   - Keep head in a slight flexed position (may help to place a small object under chin)
   - Rotate clockwise for 10 repetitions (one turn every 2 seconds)
   - Stop rotations
   - Make sure the person keeps their eyes closed and note PRN

2. Second activity (at least two people): This activity is recommended to improve fine motor, bilateral hand coordination, sequencing, and visual-motor/visual-perceptual skills. Practice teaching someone how to tie shoes independently using a backward chaining approach.

3. Third activity: Develop at least seven preparatory fun activities to prepare a child’s hand for cutting with scissors.
4. Fourth activity (group activity): Develop a step-by-step instruction chart (with pictures) of how to teach a child with deficits in fine motor, visual-motor/visual-perceptual skills how to cut on an half-inch line, then cut out a shape (i.e., square and circle using standard loop handle, self-opening and double finger loop scissors).

5. Fifth activity (group activity): Develop a step-by-step chart of household tasks for your to participate in. This should address at least the following (may include more):
   ◊ Cleaning up the room
   ◊ Assisting with simple meal preparation
   ◊ Sorting and folding laundry
   ◊ Sweeping the floor and vacuuming
   ◊ Making the bed

Test Questions

1. The original characteristic features of CHARGE Syndrome in 1981 included all except:
   a. Coloboma of the eye
   b. Heart defect
   c. Atresia of the choanae
   d. Respiratory deficits
   e. Genitourinary anomalies
   f. Ear anomalies and/or deafness

2. Children with CHARGE Syndrome often have deficits with the vestibule of the inner ear and, as a result, have difficulty understanding where his or her head is in space. When this happens, what is most likely affected?
   a. Vision
   b. Swallowing
   c. Balance
   d. Fine motor
   e. Visual motor

3. Michael hates to be touched, doesn’t like anything touching him, and cries when his parents attempt to hold or caress him. Which of the best therapeutic strategies would you recommend for Michael’s parents?
   a. Vigorous movement
   b. Firm/deep pressure
   c. Bilateral motor activities
   d. Oral motor activities
   e. None of the above

4. Samantha has had lots of problems while feeding at home as evident by choking, gagging, and reflux. You as the therapist and her parents have concerns that she may be aspirating. What would be your best recommendation?
   a. Positioning and behavior modification
   b. Encourage thickened liquids
   c. Consult a psychologist
   d. Videofluoroscopic swallow study (VFSS)
   e. Encourage thin liquids

5. Awareness of and the ability to respond to information received through a variety of channels, including auditory, visual, tactile, vestibular, auditory, and proprioceptive input is known as:
   a. Sensory integration
   b. Sensory processing
   c. Tactile processing
   d. Vestibular processing
   e. None of the above

6. Jonathan is an 8-year-old boy with CHARGE Syndrome who has hypotonia primarily in his upper body (especially noted when he is trying to hold a pencil or pen). What would be the best activity to increase proximal shoulder stability to strengthen his ability to hold a writing utensil more efficiently?
   a. Squeezing Theraputty or Play-Doh
   b. Throwing and catching a medium-size ball
   c. Assisted wheelbarrel games (walking on hands)
   d. Placing large, medium, and small pegs in a board
   e. All of the above

7. CHARGE Syndrome is a recognizable pattern of birth defect. How common is CHARGE Syndrome?
   a. Occurs in approximately one in every 9,000 to 10,000 individuals
   b. Occurs in approximately one in every 9,000 to 15,000 individuals
   c. Occurs in approximately one in every 8,000 to 10,500 individuals
   d. Occurs in approximately one in every 8,000 to 10,000 individuals
   e. None of the above

8. Which of the following is not true regarding evaluating a child with CHARGE Syndrome?
   a. Many children do not sign or speak
   b. Tactile defensiveness is not common
   c. Deficits are typically noted in hearing
   d. Children have marked delays due to vestibular dysfunction
   e. Feeding deficits are common
Finn: Autism Spectrum Disorder and Feeding Concerns

Kristin Winston, PhD, OTR/L

Learning Activities:

1. Exploring context and environment: With a partner, conduct a brief interview about what mealtimes look like. Consider issues related to context in the Practice Framework. Questions might include the following: Where do you tend to eat your meals? What is the physical environment like? What is the social environment like? Is temporal context a factor in your partner's mealtimes; if so, how does it impact mealtime? Are there any personal or cultural context factors that impact your partner's mealtimes? After each of you has been interviewed, discuss the significance of your interview results in terms of how context either facilitates or inhibits participation in mealtimes. How do contextual factors shape our participation in mealtimes? How will you consider contextual and environmental factors as a part of your evaluation and intervention with children and families who are experiencing difficulties in the occupations of mealtime?

2. Food exploration: Prior to using this exercise, determine if students have any food allergies such that substitutions can be made regarding the foods listed on the following chart to accommodate for allergies. As a class exercise, gather the foods that are listed. Have students try each food (unless an allergy prevents students from eating certain foods) and determine the sensory properties of the foods. In the final column, generate a few ideas using the Sensory Integration Frame of Reference that may help explain why a child might avoid or refuse each of the foods in the chart. This can be done independently, in small groups, or as a full class.

<table>
<thead>
<tr>
<th>Food</th>
<th>Tactile</th>
<th>Gustatory</th>
<th>Visual</th>
<th>Auditory</th>
<th>Proprioception</th>
<th>What factors within the Sensory Integration Frame of Reference might provide rationale for why a child might have difficulty with the food?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Saltine cracker or rice cracker</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Pudding</td>
<td></td>
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<tr>
<td>Fruit roll up or fruit leather</td>
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<td></td>
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<tr>
<td>Applesauce or fruit puree</td>
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<tr>
<td>Rice</td>
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</tbody>
</table>

Test Questions

1. Which of the following oral motor activities will be most effective for improving tongue lateralization?
   a. Licking pudding or ice cream from the corners of the mouth
   b. Drinking from a straw
   c. Eating applesauce from a spoon
   d. Blowing bubbles

2. Straw drinking typically emerges at what age unless a child is exposed to straw drinking earlier?
   a. 9 months
   b. 18 months
   c. 24 months
   d. 12 months

3. Which of the following skills is the first to emerge for self feeding?
   a. Drinking from an open cup
   b. Using a spoon
   c. Finger feeding
   d. Demonstrating interest in using a fork
4. Which of the following foods is not contraindicated with children with oral motor delays?
   a. Foods with a uniform texture
   b. Foods that are sticky
   c. Foods that have skins such as an apple
   d. Foods that have a thin consistency

5. A mature chewing pattern is referred to as:
   a. A munching pattern
   b. A diagonal chewing pattern
   c. A lateral chewing pattern
   d. A rotary chewing pattern

6. According to the results of Finn’s Infant and Toddler Sensory Profile, which of the following sensory properties of foods will likely be the most difficult for Finn to tolerate?
   a. Auditory
   b. Visual
   c. Olfactory
   d. Tactile

7. Based on what you know about Finn’s food preferences, he appears to prefer which of the following tastes:
   a. Sweet
   b. Sour
   c. Bitter
   d. Salty

8. According to the *Practice Framework*, Finn’s mother Maura’s participation in mealtime occupations falls within which category of occupation:
   a. Leisure
   b. Activities of Daily Living
   c. Instrumental Activities of Daily Living
   d. Work

9. According to the Occupational Therapy Practice Framework, which of the following is a factor in Finn’s personal context:
   a. Being a 3 year old
   b. Having a diagnosis of Autism
   c. Living in a family with his parents and younger sister
   d. Having a large extended family

10. To work on lip strength in a lip rounding pattern, needed for straw drinking which of the following exercises would be least effective:
    a. Blowing bubbles from a bubble wand
    b. Imitating funny faces
    c. Drinking from a sippy cup
    d. Blowing horns and whistles
## Chapter 5

### Introduction to Hospital-Based Settings

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### Alexa: Pediatric Traumatic Brain Injury/Inpatient Rehabilitation

*Sara Clark, MS, OTR/L and Jennifer Schmidt, OTR/L*

### Answer Key


<table>
<thead>
<tr>
<th>Approach</th>
<th>Focus of Intervention</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health promotion</td>
<td>Performance skills</td>
<td>Provide proper lifting and transfer technique training to Alexa's parents to prevent back injury.</td>
</tr>
<tr>
<td>Establish/restore</td>
<td>Performance skills</td>
<td>OT will work with PT to ensure the best wheelchair choice and positioning in the wheelchair for improving Alexa's participation in ADL tasks. OT will work with Alexa to develop age-appropriate self-care skills for a 6 year old. OT will start with skills that were already achieved prior to admission. OT and nursing will work with Alexa and her parents to develop a timed toileting routine to improve urinary continence.</td>
</tr>
<tr>
<td>Modify</td>
<td>Performance patterns</td>
<td>Provide a visual picture schedule to help Alexa remember the steps to her ADL routine. Provide pictures on drawers to help Alexa remember the location of her clothing items.</td>
</tr>
</tbody>
</table>

2. *Alexa's strengths*: Prior to admission, Alexa was a very obedient girl who respected adult authority. She was an excellent student in school. These premorbid strengths and personality characteristic are innate and often carry over despite the brain injury.

*Alexa's parents' strengths*: Prior to admission, Alexa's parents were always very involved in her life. They have a very close and intimate relationship with both their children. They know what motivates her. Alexa feels a sense of security when she is with them. They

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have a strong marriage and sense of team parenting. Currently, Alexa’s mother is showing signs of hesitation when working with Alexa. The OT will want to convey this information to the case manager and psychologist, so the mother can seek help for herself while trying to be a strong support for her daughter. It is important for the entire rehabilitation team to address modifiable psychosocial risks to the child’s environment (Gerring & Wade, 2012).

3. **Short-term goals for Alexa this week:** These goals will need to be submitted to the insurance company along with her specific WeeFIM numerical ratings for this week, in order to justify a continued inpatient rehabilitation stay over being discharged to home with less intensive outpatient services.

   ◦ Alexa will use her left upper extremity as a dependent stabilizer two times without verbal cues this week during functional table top tasks.
   ◦ After one verbal cue for visual scanning strategies, Alexa will spontaneously access food on the left side of her plate one time during a meal session.
   ◦ Alexa will thread her left upper extremity through a short sleeve shirt hole with no more than three verbal cues, in supported sitting in her wheelchair.
   ◦ Alexa will demonstrate ability to maintain unsupported short sitting for at least 5 minutes during a functional table top task with one upper extremity support with contact guard assistance.
   ◦ Parents will independently complete timed toileting program with Alexa three full days this week, assisting with safe transfers, clothing management, and wiping.

4. **Feeding goals:** Occupational therapy will most likely focus on self-feeding, and speech therapy will most likely focus on slowly upgrading the consistency of Alexa’s diet for safe swallowing. As Alexa builds trunk and head control and gains increased awareness of clearing food from the left side of her mouth, she will be able to safely try more diverse consistencies of solids and liquids. Speech therapy will help Alexa slowly upgrade solids from soft to mechanical soft to mixed textures to a regular diet. She will slowly progress from nectar-thick to thin liquids. OT’s role in feeding will first focus on the optimal upright positioning of Alexa in her wheelchair during meals. Improper head and neck positioning can negatively impact the swallowing phases during eating (Morgan, 2010). When Alexa is properly positioned with her hips close to a 90-degree angle, her head and neck will be in a good upright position to minimize her chance of aspiration and increase Alexa’s visual field and attention to the left side of her plate. OT will also work on her ability to open packages and containers with one hand.

Both speech therapy and occupational therapy will instruct Alexa’s parents on how to use simple verbal cues to slow down the pace of taking bites and sips of liquid during a meal, to minimize aspiration risk. The role of OT and SLP in feeding assessment and intervention varies greatly from facility to facility depending on the current staff’s level of expertise and experience and/or the historic roles of the disciplines in feeding. Self-feeding, positioning for feeding, and educating parents on the signs of dysphagia are considered entry-level skills for OTs. More advanced swallowing assessment is considered an advanced-level skill and requires specialized training (AOTA, 2007).

5. Often the executive control over cognitive processes (associated with the vulnerable frontal lobes), rather than the specific processes themselves (e.g., memory/learning, attention, organization), should be the focus during rehabilitation for a child with a TBI involving the frontal lobe (Ylvisaker et al., 2005). Helpful strategies for executive function challenges from prefrontal cortex damage (Galvin & Mandalis, 2009) are as follows:

   ◦ Have Alexa practice self-care skills in natural environments such as brushing teeth in the hospital bathroom at the sink instead of at the bedside table.
   ◦ Provide Alexa with a written list and picture cues for consistent steps of routine ADL tasks.

**Main Safety Considerations**

- **Fall risk:** Alexa may try to get up out of her bed or her wheelchair on her own and potentially fall. She is unaware of the severity of her motor and balance deficits. The PM&R physician has ordered Alexa to have four side rails up on the hospital bed and a bed exit alarm if she is alone in the room for short periods of time. She should always have her seat belt on when in her wheelchair. She should be directly handed off to another person between therapy sessions and never left alone while in her wheelchair. OTs have an important role to work with the interprofessional team to fill Alexa’s day with activities that keep her engaged. These might include work with the Child Life Specialist, music therapy and pet therapy, in order to reduce the amount of time she would need to be left alone in the bed with four side rails as a restraint (Champagne & Mahffey, n.d.).

- **Protection of left upper extremity:** Due to Alexa’s left neglect, she may roll onto her left arm when in bed, which may pinch a nerve, impact blood circulation, or cause pressure points. Alexa may not realize her left arm is dangling when sitting in the wheelchair, which may put her at risk for shoulder subluxation or distal damage from getting caught in the wheelchair.
### Intervention Implementation

**Therapeutic Use of Occupations and Activities**

**Occupation-Based Intervention**

<table>
<thead>
<tr>
<th>Self-Care Task</th>
<th>Position/Cues/Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Upper body dressing</strong></td>
<td>The OT will have Alexa start upper body dressing with full trunk and head support, sitting up in the wheelchair. As Alexa gains head and trunk control, she can attempt upper body dressing sitting on the edge of the bed, with her feet on the floor. Alexa may need verbal or tactile cues to thread her left arm first.</td>
</tr>
<tr>
<td><strong>Lower body dressing</strong></td>
<td>The OT will have Alexa start lower body dressing with full trunk and head support, sitting up in the wheelchair. As Alexa gains head and trunk control, she can attempt lower body dressing sitting on the edge of the bed, with her feet on the floor. Alexa may need verbal or tactile cues to thread her left leg first. Alexa will be encouraged to stand with one upper extremity support to advance her pants.</td>
</tr>
<tr>
<td><strong>Grooming</strong></td>
<td>The OT will have Alexa complete grooming while sitting upright in her wheelchair, in front of the sink and a mirror. Most hospital bathrooms have access under the sink for the wheelchair to roll under the sink counter. The OT will work on active anterior pelvic tilts to allow Alexa to turn on the water. Alexa may need verbal cues to scan to the left side of the sink to find all of her grooming items.</td>
</tr>
<tr>
<td><strong>Toileting and toilet transfer</strong></td>
<td>Best practice involves OT communicating with nursing and parents about Alexa’s gains with participation in toileting, adaptive equipment needs (grab bar), and transfer status (stand-pivot with use of grab bar) via chart documentation, reporting during weekly team conferences, and one-on-one collaboration with nurses to develop the optimal toileting routine. Nursing will usually develop a timed toileting schedule. Some rehabilitation units use a toileting log to document trends in continence. Parents are often very involved in the toileting routine since children are most comfortable with their parents. OT, nursing and the parents should collaborate on the ideal toileting program.</td>
</tr>
<tr>
<td><strong>Bathing and shower transfer</strong></td>
<td>Best practice also involves OT communicating with nursing and parents about Alexa’s gains with participation in bathing, adaptive equipment needs, and transfer status. Alexa will initially need the full trunk support of a rolling shower chair and will eventually progress to a less supportive tub bench. She will need assistance to wash her right arm. The OT can work with Alexa to request help from her parents for washing her right arm. Alexa will most likely feel most comfortable with her parents bathing her and transferring her in and out of the shower.</td>
</tr>
</tbody>
</table>

### Purposeful Activities

- Alexa’s parents will practice a dry tub bench transfer with Alexa in the simulated bathroom.
- Alexa’s parents will practice a simulated car transfer with the car in the therapy gym.
- Alexa’s parents will practice bumping her wheelchair up the training stairs in the therapy gym.
- Encourage Alexa to use her left upper extremity during bimanual play tasks:
  - Hold vertical handle of drum with left upper extremity while right upper extremity bangs on drum with stick.
  - Place one cymbal on her left hand and use the right hand cymbal to bang on her left cymbal while encouraging active supination of the left forearm as the target.
  - Alexa uses her right hand to place items in her left hand, such as a thick marker or glue stick and then uses her right hand to put the top on/off. She will require a lot of hand-over-hand assistance with tasks like this because her left arm has minimal movement against gravity.

### Preparatory Methods

Alexa is showing signs of motor return in her left upper extremity. Preparatory methods can be used to strengthen the left arm in preparation to use the left arm more during functional tasks. Alexa has a manual muscle grade of 2+ throughout her left upper extremity, and Modified Ashworth Scale rating of 1+ to 2 in all flexor muscle groups. Hemiparetic spasticity can be managed with positioning, active and active-assistive mobilization, electrical stimulation of the antagonist muscle to facilitate relation of the agonist (also can use electrical stimulation to fatigue agonist muscle), and functional retraining (Botte et al., 2011).

The following are ways to strengthen muscles in a gravity-eliminated plane.

#### Therapeutic Exercise on Mat

- **Supine position; shoulder abduction**: Alexa’s arm can be placed in an elbow immobilizer (Figure 5-1) to block out the work of the bicep and focus on active contraction of the left middle deltoid. A red ball (Alexa’s favorite color) can be used for motivation to actively abduct her arm in order to hit the ball (see Alexa Mat Abduction video).
- **Side lying; shoulder forward flexion**: Alexa’s arm can be placed in an elbow immobilizer to block out the work of the bicep and focus on active contraction of the left anterior deltoid. The red ball can be used for motivation to try to move her arm overhead, along the mat, to hit the ball.

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Slings

While Alexa is seated in her wheelchair, her left elbow can be placed in the elbow immobilizer. Then, her entire left arm can be placed in an overhead sling to unweight the limb (Figure 5-2). The therapist can use a bubble popping game to promote and encourage active shoulder abduction and horizontal adduction to pop the bubbles (see Alexa Sling video).

Neuromuscular Electrical Stimulation

Neuromuscular electrical stimulation (NMES) can be used on any of the muscles in Alexa’s left upper extremity that are actively contracting (deltoid, tricep, digit extensors, and wrist extensors). NMES will work best in gravity eliminated planes with Alexa in conjunction with a game or activity. You can place Alexa’s left arm on an elevated table. Then, place the electrodes in position on Alexa’s proximal-posterior left arm for tricep stimulation (Figure 5-3). As the tricep is firing in extension, with the help of NMES, Alexa will try to hit a ball off the table with her distal left upper extremity (see Alexa Tricep video).

ArmeoSpring Pediatric

The ArmeoSpring Pediatric (Hocoma; http://www.hocoma.com/products/armeo/armeospring-pediatric/) has an arm-weight support for Alexa’s left upper extremity,
which can be adjusted to custom fit Alexa's arm. The arm weight support is attached to an exoskeleton that hooks into an interface screen for Alexa to view. The ArmeoSpring Pediatric will help Alexa facilitate self-initiated and active movement of her left arm. As she actively moves her arm, she will directly interface with the video screen. Movement of items on the screen only happen with active movement by the child. The ArmeoSpring Pediatric can be adjusted for active use of the entire left arm or any movement in isolation: shoulder flexion/extension, shoulder abduction/adduction, elbow flexion/extension, forearm supination/pronation, or wrist flexion/extension.

**Discharge Needs (Items to Address for Alexa to Return Home)**

- **Wheelchair:** OT and PT will work closely together to make recommendations for Alexa's rental wheelchair. Since Alexa is demonstrating improvements with LE strength for standing, the therapy team will recommend a manual wheelchair for discharge. Alexa's permanent manual wheelchair will take longer to finalize, and will be delivered to her home when it is ready.
- **Home access:** The OT and PT will ask Alexa's parents to bring in pictures of their home and measurements of doorways. OT and PT will instruct the parents on how to safely take or “bump” a manual wheelchair up the steps inside and outside the home. The OT and PT will also educate the family on ramp options and costs (temporary and permanent). A home visit for a weekend day is highly encouraged to assess wheelchair access of the home, prior to discharge.
- **Bathroom equipment:** Alexa will most likely progress from the fully supportive-shower chair to a tub bench by discharge. As Alexa gains trunk and head control and more active movement in both her left upper and lower extremity, she will be able to sit up with less external support. A tub bench will still provide back support. The family currently has a tub shower at home. So a rolling shower chair will not work with their current shower design. The tub bench is much less expensive than a rolling shower chair.

No bathroom equipment is covered by Alexa’s private insurance. Alexa’s father has already installed grab bars next to all of the toilets in the house to assist with Alexa’s stand-pivot transfers on/off the toilets.

### Outcome Measures

1. **Long-term WeeFIM goals:** Alexa will need increased time with all of her ADL tasks, even at discharge in 8 weeks:

<table>
<thead>
<tr>
<th>Self-Care Task</th>
<th>WeeFIM Score</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feeding</td>
<td>5</td>
<td>Alexa will need assistance to open packages and set up her food. Cutting food into bite-size pieces will be difficult for her due to her age and the functional use of only one hand. She may also need supervision while eating for verbal cues to not eat too fast and to remember to scan the left side of her plate to access all of the food on her plate.</td>
</tr>
<tr>
<td>Grooming</td>
<td>5</td>
<td>Alexa will most likely need supervision during grooming tasks to make sure the water at the sink is not too hot. She may also need verbal cues to make sure she if fully washing the left side of her face and brushing the left side of her hair.</td>
</tr>
<tr>
<td>Upper body dressing</td>
<td>4</td>
<td>Alexa will most likely need supervision and verbal cues for using hemi-dressing techniques. She may need minimal assistance for buttons and zippers due to the functional use of only one hand.</td>
</tr>
<tr>
<td>Lower body dressing</td>
<td>4</td>
<td>Alexa will most likely be able to thread her underwear and pants, by threading her left leg first. She should be able to stand with contact guard assistance to advance the pants and underwear. She will probably need minimal assistance help getting her socks on due to the functional use of only one hand. Velcro or slip-on-shoes and elastic waist pants will help make lower-body dressing easier for Alexa to do by herself.</td>
</tr>
<tr>
<td>Toileting</td>
<td>4</td>
<td>Alexa will most likely be fully continent by discharge. She will need supervision during toileting for safety when standing to lower/raise her pants and underwear. She may need verbal cues to fully wipe and clean her perianal and buttocks. Alexa will most likely need assistance with fasteners on her pants such as a button, snap, or zipper. Elastic waist pants are encouraged, but 6-year-old girls often have strong opinions about what they want to wear.</td>
</tr>
<tr>
<td>Toilet transfer</td>
<td>4</td>
<td>Alexa will most likely need contact guard assistance and the use of a grab bar for a stand pivot transfer from her wheelchair to/from the toilet.</td>
</tr>
<tr>
<td>Bathing</td>
<td>4</td>
<td>Alexa will most likely be able to thread her underwear and pants, by threading her left leg first. She should be able to stand with contact guard assistance to advance the pants and underwear. She will probably need minimal assistance help getting her socks on due to the functional use of only one hand. Velcro or slip-on-shoes and elastic waist pants will help make lower-body dressing easier for Alexa to do by herself.</td>
</tr>
<tr>
<td>Shower transfer</td>
<td>4</td>
<td>Alexa will most likely need contact guard assistance for wet stand-pivot transfers due to poor balance when standing without an AFO on her left ankle/foot.</td>
</tr>
</tbody>
</table>
Documenting functional outcomes, by showing gains in WeeFIM scores from admission to discharge, is essential proof to Alexa’s private insurance, the benefits of intensive inpatient occupational therapy services (Chen et al., 2004). Normal development needs to always be considered when estimating WeeFIM discharge ratings. A 6 year old without a brain injury would not be independent in all self-care skills. Therefore, age is just as important as level of admission function when predicting discharge WeeFIM ratings (Chen et al., 2004).

**Therapy Needs After Discharge to Home**

Since Alexa continues to need all three therapy services (OT, PT, SLP), Alexa will need intensive day rehabilitation services at discharge. Day rehabilitation offers a comprehensive and interprofessional approach. Alexa will attend her day rehabilitation program from 9 AM to 3 PM. She will receive OT, PT, and SLP in the morning and in the afternoon in the form of both individual and group treatment sessions.

**Alexa’s Return to Education Services From the Public School District**

The case manager on the inpatient unit will refer Alexa to the public school services on the inpatient rehabilitation unit. The case manager will also work with Alexa’s home-public school district to begin the process of establishing an IEP. Alexa is eligible to receive public school services while she is on the inpatient rehabilitation floor. Since she attended a public school outside the district of the hospital prior to admission, the case manager can provide paperwork for Alexa’s parents to sign that allows the public school teacher who provides services within the inpatient rehabilitation hospital to contact her home school district for permission to work with her. Alexa will go to day rehabilitation services for therapy after inpatient rehabilitation. The day rehabilitation team will work more closely with Alexa’s home district for IEP recommendations and planning her return to her own public school in her district. Formal neuropsychological testing will be done to better determine Alexa’s intellectual abilities for academics post-TBI.

Current research in the area of pediatric TBI demonstrates that impairments in the client factor areas of cognition, mobility, communication, executive functions, social competence, and educational performance are inseparable (Ylvisaker et al., 2005). Occupational therapists need to ensure that their assessments, activity analysis, and interventions integrate all functional domains. Physical, cognitive, behavioral, communication, and academic skills are embedded in a physical and social environmental context. Occupational therapy inpatient rehabilitation services should focus both on collaboration with all team members and note the power of context sensitivity (Ylvisaker et al., 2005) and true occupational based-activities for best outcomes.

**References**


**Jonathon: Pediatric Spinal Cord Injury/Rehabilitation**

**Gail A. Poskey, PhD, OTR**

**Learning Activities**

1. Describe how occupational therapy intervention would be for Jonathon at age 13 years (projecting forward to what his goals and needs would be 11 years post-injury). What would be the focus of occupational therapy intervention at age 21 years?

2. Given that Jonathon is now 5 years old and discharged from outpatient therapy, describe how his intervention would be different in a school system and also describe how his intervention would differ in a home health setting.
3. Review the following key terms:
   ◦ Autonomic dysreflexia
   ◦ Functional spinal cord levels C1-C8 and T1-T12
   ◦ American Spinal Cord Injury Association (ASIA) International Standards for Neurological Classification of Spinal Cord Injuries
   ◦ Neurogenic bladder and bowel
   ◦ Developmental stages for a child 2 to 5 years of age

Test Questions

1. Which classification corresponds with a complete Spinal Cord Injury (SCI)?
   a. ASIA A
   b. ASIA B
   c. Spinal Cord Syndrome
   d. Brown Sequard’s Syndrome

2. A child with an ASIA A C7 SCI is unlikely to demonstrate autonomic dysreflexia.
   a. True
   b. False

3. There are eight cervical vertebrae.
   a. True
   b. False

4. A C7 major muscle innervation would be:
   a. Biceps
   b. Wrist Extensors
   c. Hip flexors
   d. Triceps
   e. Ankle flexors

5. Developmentally, a child 3 years of age without a spinal cord injury would be able to:
   a. Dress self with some assistance from caregiver
   b. Perform toileting independently
   c. Require moderate assistance with feeding
   d. Bathe independently

6. Autonomic dysreflexia would be seen in individuals with what level of lesion?
   a. C7 and above
   b. L2 and above
   c. T6 and above
   d. T12 and above

7. Jonathon is 5 years of age. Psychosocial and sexual identity are considered important areas to address with Jonathon and his family.
   a. True
   b. False

8. At 3 years of age, which task would be appropriate for Jonathon to engage in given his functionally level of return of C8 on the right and T1 on the left?
   a. Hold a crayon and begin to scribble on paper
   b. Cut up meat and vegetables with a knife and fork
   c. String three 2-inch beads

9. Given Jonathon is now 5 years of age, who would be responsible for providing bowel and bladder care?
   a. Jonathon would be independent with the majority of his bowel and bladder care
   b. The family must depend on home health nursing to provide the majority of his bowel and bladder care
   c. His primary caregivers would be responsible for providing his bowel and bladder care

10. Children with an SCI who are less than 6 years of age are not at risk for decubitus ulcers (pressure sores).
    a. True
    b. False

Resources


Martha: Spina Bifida/ Hospital Clinic

Rachel Galant, MS, OTR/L

Final Progress Update

After a lot of frustration, crying, and almost giving up, Martha was able to insert the catheter by the third day of treatment. She was so proud of herself and couldn’t wait to tell her mother.

The next time Martha came to clinic, she and her mother were happy to report that Martha was now able to self-catheterize at home and at school. Martha’s mom still did the morning cauterization when she was just waking up and getting out of bed because Martha was still so tired. However, Martha went to the nurse at school two to three times per day and got minimal assistance. She did need reminders of when to go to the nurse’s office, and they ended up purchasing a timer watch so that she would have a cue of when to do this. The nurse also had to remind her
to wash her hands thoroughly and use good cleaning techniques. All in all, it was a big improvement from where they were before with it all.

Liam: Acute Myeloid Leukemia, Septic Shock, Cardiac Myopathy/Oncology

Lisa Robken, OTR

Learning Activity

1. Break into pairs and role play the conversation with Liam's mom regarding realistic expectations for the first therapy session. Practice the following scenarios utilizing therapeutic use of self:
   a. Mom is angry at the therapist because Liam is a "normal child" and is ready to stand.
   b. Mom is scared that Liam might get hurt and she is reluctant to let the therapist work with the patient.
   c. Mom is nervous about how the session will go, which is causing Liam to become nervous as well.

2. What are some psychological interventions to incorporate in treatment sessions with children to manage anxiety? Perform a brief literature review to determine if some are more effective than others.

Test Questions

1. The patient fidgets with his arterial line during the initial treatment session. The therapist has concerns the line could be compromised. What should she do?
   a. Stop the session and educate the mom in the importance of the patient not touching the line.
   b. Restrain the patient's hands.
   c. Check with medical team to place a stockinet dressing over the arterial line and continue session.
   d. Check with medical team to place a stockinet dressing over the arterial line, continue session, and educate mom and patient.

2. Ideally, which medical team member would likely be present during the initiation of the first OT session in the ICU for vitals monitoring?
   a. Physician
   b. Nurse and respiratory therapist
   c. Physician and nurse
   d. Physical therapist

3. What are the most likely reasons that standing is so uncomfortable for the patient?
   a. He doesn't like it
   b. The knee flexion contractures cause him to feel unbalanced
   c. Decreased strength
   d. All of the above

4. If Liam's counts remain below the expected average, he would most likely benefit from:
   a. Home health therapy
   b. Outpatient therapy
   c. Outpatient therapy with a mask and gloves
   d. A and C

5. With a child undergoing cancer treatment for leukemia, typical side effects would be:
   a. Fatigue
   b. Diabetes
   c. Weight gain
   d. Visual changes

6. Why might the therapist be so concerned with incorporating standing in his initial treatment sessions when he is also receiving physical therapy?
   a. To address balance
   b. To encourage age-appropriate ADLs and restore premorbid function
   c. To make the patient feel uncomfortable
   d. In order to determine whether he will be in need of a wheelchair at discharge.

7. What might be signs of a patient attempting to exert control over the treatment session?
   a. Crying
   b. Manipulating the therapist to leave
   c. Throwing things
   d. All of the above

8. What might be something to add to his environment to allow mom and patient to have more control over their day without compromising medical care?
   a. A daily schedule developed by team, patient, and family
   b. More input into meal times
   c. Have mom and patient dictate when medicines ought to be delivered
   d. Have patient sleep whenever he wants, even during the day.
9. What might be a realistic short-term goal during Liam’s ICU stay?
   a. Liam will ambulate from the door and back independently in order to increase activity tolerance for meaningful occupations
   b. Liam will demonstrate increased sitting tolerance by eating breakfast EOB with minimal assistance
   c. Liam will don/doff LB and UB with independence
   d. Liam will increase one muscle grade in gross shoulder flexion
10. What might be a realistic long-term goal for Liam during his entire hospital stay? (Remember, he was in the hospital for about 8 weeks.)
   a. Liam will be independent in toileting and related transfers
   b. Liam will don/doff LB and UB with independence
   c. Liam will demonstrate increased activity tolerance by engaging in play activity on floor for 30 minutes with only one rest break
   d. Liam will eat with moderate assistance

Resources

Lyrik: Amyoplasia Multiplex Congenita/Outpatient

Angela R. Shierk, PhD, OTR

Learning Activities
1. Practice making a custom elbow flexion splint on a peer or patient.
2. Lyrik will be starting kindergarten next year. Write out a list of recommendations for a teacher that would increase Lyrik’s independence in the classroom and school environment.

Test Questions
The questions are based on the diagnosis of arthrogryposis. Please refer to the resource Arthrogryposis: A Text Atlas (listed in resource section) for additional information. This resource was created for clinicians and families and is available online at no charge.
8. The focus of occupational therapy for a child with AMC in elementary school should be:
   a. On transitioning into college or the work force
   b. Improving independence with ADLs, identifying adaptive equipment/assistive technology to promote independence at home and school, promoting community participation
   c. Working on infant and toddler developmental milestones
   d. None of the above

9. The focus of occupational therapy for an adolescent with AMC should be:
   a. Providing positioning options to increase independence with play
   b. Improving independence with handwriting
   c. Working on developmental milestones
   d. Independence with IADLs, independence with dressing and grooming, transitioning out of high school/future goal setting

10. Which occupational therapy assessment can a therapist use to establish and measure functional goals throughout the lifespan?
    a. Canadian Occupational Performance Measure (COPM)
    b. Child Occupational Self Assessment (COSA)
    c. Perceived Efficacy and Goal Setting System (PEGS)
    d. School Function Assessment

Resources
Sophia: Early Intervention/Infant Mental Health

Kris Pizur-Barnekow, PhD, OTR/L; Jennifer Nash, PhD, OTR/L; Susan Wendel, MS, OTR/L; and Molly Chopper

Parent/Caregiver Interview

General Background Info

- Girls were born in Washington (Spokane). Mom was living in Idaho, traveled to the closest big city (Spokane) to give birth.
- Ever since the girls were discharged from the hospital, they've had an OT. In Idaho, an OT would come to their house, she would work with the girls, and mom was meant to observe. Even in speech (at Boyer, where they currently receive EI services), those sessions are very different from the OT session with Sue. The SLP works with Sophia and mom's just sitting there.
- Were they born early? Yes, they were born 15 weeks early. Bella stayed in the NICU 4 months and Sophia stayed 4.5 months (at birth she weighed 1 lb, 9 ounces).
- What are you going to school for? How many classes are you taking? Molly is going to school online through Kaplan, currently going to school for a BA in psychology. Full on school. Putting in time every day. She made this choice because she wanted to inspire her daughters. She's been a gypsy most of her life. Now she needs a career for her daughters. Taking two classes at a time, 10 credits. Will go on for a Master’s (fast track). Short-term goal: wants to work with teenagers. Molly participated in a lot of personal development courses for herself. She knows that time in your life is very influential (the teenage years). Long-term goal: eventually, she wants to be a clinical psychologist and have her own clients.

Learning About Parent Experiences

1. How would you describe your child Sophia?
Very tender, loving, little being. Sophia enjoys her own little world that she lives in. She has been through so much in her short life already. Surgeries, hospitals, a lot of that has contributed to her feeling like it's okay to take her time. She has been very slow in her development up until now. She has this little sparkle.

◊ Three surgeries and nine hospital visits: When Sophia was in the NICU, that was a trying experience. On and off the ventilation, on and off oxygen. When she was 2 weeks old, she had a surgery on her heart to close the PDA (hole in heart). There was the roller coaster of the NICU. Right toward the end, at about 4 months old, she needed to get eye surgery for retinopathy of prematurity (ROP). Then, after being released (in May), she got pneumonia really bad. Had to be intubated. She's had pneumonia three or four times. Last May, she had really bad pain in her bowels. Part of the bowel slide (intussusception) on top of itself and Sophia had to have emergency surgery.

◊ Did you have support during those times? When I first had them I didn't have much support (mom and sister were good for a phone call). Lived in the Ronald McDonald House in Spokane while they were in the hospital. Even after discharge from the NICU to their home place in Idaho, I was home most of the time. It was hard to find someone to come over for just a little bit, so I could run to the store for groceries. Most of my support was in
Seattle (five to six friends). That’s why we moved from Idaho to Seattle in June (very soon after the girls were born).

2. How would you describe your relationship with your child?
Very nurturing and loving.

3. Can you describe what a day might look like for you and your child starting with when she gets up to when she goes to bed?
She’s a good sleeper. Sometimes, she’ll sleep until 9 AM. They do a good morning routine. Change diapers. Go into the living room for play time and rub their little backs. Then it’s time for breakfast. They sit in their high chairs. Breakfast is the meal where I try to introduce new things (spoon and fork) maybe introduce some new foods. Then it’s cartoon time. They watch cartoons while I clean up the house. Then they go for a walk, color. Lunchtime. Back in the high chairs. Now that Sophia is starting to crawl, I try to get her to follow me into other rooms. I try to tempt her into following me around. Usually when they take a nap, I try to do my school work. Then they’re up and they’re playing. In the evening, after dinner and jammies are on, we read books and I try to focus on getting her to do gross motor and read books. I sit and play with them for about an hour, hour and a half. Mornings and evenings are really our special time together.

4. What do you think children need most?
Love and support and encouragement and attention. I’m a huge fan of positive reinforcement. I babysit two other kids (ages 2 and 8 years—children of one of her supportive friends in Seattle), where I practice positive reinforcement with them all the time. My life and how I was raised is the exact opposite of positive reinforcement. There was a lot of being quite down and how I was raised is the exact opposite of positive reinforcement with them all the time. My life due to my environment. Somehow, having that opposite experience has helped me.

5. What are your hopes for your child? What are your hopes for your relationship with your child?
My biggest hope for Sophia is that she has self-respect and self-love. That is the absolute number one thing that I hope for her. From there, I want for her to follow her dreams and go for it. Do well in school and learn and grow and apply herself. Right now, I really hope that she walks and feeds herself. I want for us to be able to communicate openly throughout their lives together. I want her to know that I love and support her no matter what.

6. What worries, if any, do you have about your child right now?
My concern about Sophia, I worry about her social life down the line. I know how things go through her brain is a little bit slower than the average kid. I just worry that she will get picked on in life, maybe not be able to fully play with her sister and her peers. I don’t want her to face that in her life, getting picked on.

7. What do you feel you need most right now?
Time. More time. Energy. I wish I had a nanny. I don’t feel that I need much. Next year, the girls will be going to Head Start a few hours each day, which will free up some time each day for me to do what I need to do. It’s the same old energy and time.

6. Are you glad you moved to Seattle? So glad we moved to Seattle. I am inspired. I come from a small town that is full of drama and it’s easy to feel stagnant. Living here in Seattle, I absolutely love it. I’m constantly inspired. Taking beautiful walks, the museums, the zoo; there’s such rich culture. As far as the girls, their health and their development, Seattle Children’s—she can’t sing their praises enough. Everyone they’ve worked with (Boyer Children’s Clinic, Head Start, WIC) everyone’s super helpful and knowledgeable. Everyone genuinely cares. It’s nice to have everyone in one city.

Learning About a Child With Special Health Care Needs

1. When did you first have a worry about your child?
When did you first realize your child might have a special need?
In the NICU, close to the time of discharge. The doctors, nurses, and OT, they all said that Sophia would have some hurdles. Her lungs were weak and she was susceptible to getting sick.

2. What were your feelings at the time of this realization?
I just worried that the worst would happen. Along with that, knowing that hospital visits would be with two of them (one sick, one not). Scared. Scared about her health, scared that I wouldn’t be able to do everything. Wondering if I would be capable of doing it on my own. At the same time, I have always felt that how I feel affects the girls. If I’m fearful and scared, that feeds into their atmosphere. So I try to stay loving and positive (even if deep down I’m scared). There were some times I was worried about Sophia’s’ ability to function in the world (development in all areas), a lot of that has lifted.

3. Have your feelings changed over time?
Yes. Definitely. Over time, getting to know her and being with her and understanding her. She’s going to be just fine. No matter what. However it looks.

Whatever road blocks come up, she’s going to be fine. She’s a beautiful little being. I have grown to have more acceptance and those things don’t matter to me anymore.

4. What’s it like to parent your child with his or her specific need?
Sometimes it’s kind of frustrating. Just because she has a lot of intestinal issues. Anything around bowel movements, she can have a lot of pain. It’s hard to constantly carry her everywhere. Trying to resolve her problem (not breathing right, painful bowel movement). On a great day, her and her sister will entertain each other and she and I can engage in a lot of activities. But when she’s having a bad day, it can be pretty brutal. It’s more than just frustrating. There’s a lot of joy in watching her little achievements. With Bella, she was crawling, then walking, things happened so quickly. With Sophia, her achievements are almost more exciting. In that anticipation, wondering if it would ever happen. Like when she started crawling, I called everyone and told everyone. Sue (her current OT) was the one I was most excited to tell. I couldn’t wait for Sue to see it. I knew she would be so happy. She has worked just as hard as I have toward this.

5. What kinds of services have your child and family received to help with the special need?
We are in the Early Head Start program. OT and speech through Boyer Children’s Clinic. A lot of specialists at Seattle Children’s Hospital. Sophia sees a cardiologist for her enlarged aorta, a pulmonologist for her lung disease, and a dermatologist for her rare skin disorder (congenital erosive and vesicular dermatosis—affects 90% of their bodies). The first major thing that happened besides being premies was trouble with their skin. The girls’ skin would blister, the nurses couldn’t move them or touch them—their skin would bleed and rip—the girls are half black—their pigmentation was different. They also see an ophthalmologist for their eye surgeries.

6. What new skills are you working on with Sophia?
Walking and feeding herself. With speech, being able to communicate with me (instead of throwing a fit and expecting me to be psychic)—moving more, feeding herself, and communicating.

7. How do you imagine your future relationship with your child?
Having open communication with her. More of the same of what we’re doing. I would like more interaction. I’m excited about when Sophia can talk to me. I look forward to playing more games.

### William: Bipolar Disorder/School

**Sally W. Schultz, PhD, OTR, LPC**

**Scenario for Student — Experiential Learning Activities**

The second year OT students are preparing to assist a school-based occupational therapist with group therapy activities (on a Monday-Wednesday-Friday 11:00 to 1:00). The therapist bases her practice on the Theory of Occupational Adaptation. The students she is working with during this group have significant learning disabilities and frequently display aggressive behavior.

The OT students are informed the therapy group includes two therapeutically designed activities (group lunch and the creation of salt map posters of the five major continents). The targeted goals for the group are to improve social skills, cooperative learning, problem solving and development of alternative behaviors when frustrated.

**Learning Activities**

1. Students are divided into groups of three or four. They are informed they should learn the technique of creating the salt maps. They are expecting to be given the recipe to make the mixture for the salt map. However, the instructor communicates that she couldn’t locate the recipe, but she is sure it is a combination of salt, flour, oil, and water. She supplies the ingredients, mixing bowls, measuring cup, and a large (3 x 4) foam core poster board, and large map of one of the continents for each group of students. They are asked to proceed with making the salt maps. (*FYI Instructor: salt/flour/oil/water is mixed to a consistency that it is moldable and will stick on the poster board. After it dries, it can be painted with watercolor, etc.* When completely dry, it can be attached to a wall.)

The instructor observes the processes and, in particular, the adaptive responses displayed by the students as they proceed through the work. Some students will become anxious that they don’t have the recipe, others will tend to be hyperstabilized, others will want to get on their Apple iPad (not permitted) and find the recipe, others will activate other efficient and effective adaptive responses. Toward the end of the group project, the instructor should have observed students’ immediate adaptation gestalt, how they worked through it, or how they let someone else work through it for them. Instructor processes with this class what their experience was, how they reacted,
and how they understand that experience based on OA theory. This activity will not only help the OT student become aware of his or her own adaptive responses when faced with an occupational challenge, but help them experience what the student with serious learning disabilities experiences throughout much of every day at school.

2. Using the same scenario above, the instructor role plays being a student who is typically acting out aggressively because he “ruined” his dough and is just about to begin throwing it. Each student tries out his or her intervention based on OA while the other students observe. The objective is for the student to seize the “window of opportunity” soon enough to help the student redirect himself, modify his adaptation gestalt, and regain control over himself. The case study illustrates what this may “look like.” In between each role play, the instructor discusses what went well with the preceding student’s intervention and what could have been done better. Students should be encouraged to even practice out loud what they believe they are going to do with the acting-out role playing instructor. Using the instructor is preferable as instructors have a much better notion of what typical behavior “looks like” and they can moderate that as appropriate to the student’s level of knowledge/experience.

Test Questions

The following questions were designed for discussion and/or short answer responses. There are several answers that are appropriate responses. The answers provided are not intended to be comprehensive. However, they do incorporate some of the key components of understanding the basics of OA-based intervention as described in this case.

1. How are OA-based interventions different from a behavioral approach?

   The emphasis in OA-based approach is on helping the student become more adaptive through self-determined solutions as much as possible. It is a graded method of intervention in which the therapist grades his or her interventions just as keenly as the activity may be graded. While success in the activity is desirable, the targeted focus is an improvement in the student’s ability to develop his or her own adaptive response that leads to an increased sense of mastery. OA-based theory asserts that the increased sense of mastery (obtained through self-generated processes) is the fuel that will empower the student to see him- or herself as an agent of change. In contrast, a behavioral approach places greater emphasis on managing the student’s behavior, completing the task according to the direction, and providing reinforcement of the desired behavior through external reward.

2. What is the targeted outcome for interventions based on OA?

   The targeted outcome in therapy based on OA theory is not focused on managing the student’s behavior. It is focused on strategic interventions to help the student becoming progressively able to generate new adaptive responses that lead to a greater sense of mastery and sense of self as an agent of change. Such responses become learned processes that can generalize to better manage challenges in similar activities/situations and then to novel activities/situations. The student expands his or her adaptive repertoire (from basic fight or flight) to include new ways of reacting when he or she encounters life challenges. The process occurs progressively through the therapist’s well-considered therapeutic use of self along with introducing modified/new activities that produce the “just right challenge” for that student. Evidence of the student’s integration of new adaptive responses and generalization to other activities/situations becomes the measure of effective treatment.

3. How would instruction be introduced as part of an OA-based intervention with this group therapy?

   Instruction would provide only the amount of direction that is absolutely essential. For example, rather than laying everything out for the student, it would be preferable for the therapist to make the “activity” (i.e., cardboard, glue, paper, glitter, scissors) available. The instructor begins working with the media. As the instructor works with the media, the students are naturally drawn into the activity. They may often say, “I want to do that.” Rather than saying, “Of course William, I’ll show you how,” OA-based therapist would say, “I’m making a salt map.” The therapist may point to one he or she has already completed. “I have to mix the salt, flour, and oil together until it is not too sticky and not too dry.” Rather than attempting to draw the student in, the therapist continues with his or her work. The student will continue to want to become engaged. This dynamic continues with the student becoming part of the activity, then another student asks to be involved. The therapist will progressively develop different roles for students to play in the activity based on their readiness for that type of involvement. This progresses into independent work, measuring with a measuring cup (math, attention to detail, etc.), drawing onto poster, building the map, coloring it, and then taking photos of students doing the work so they can go up in the hall during parent night. The goal is not the map, but the student starting to learn that he or she can manage him- or herself, be goal directed, handle frustration, and create a product that he or she feels proud of. “Instruction” presents as a naturalistic engagement in meaningful, challenging, and rewarding activity.

4. How would you imagine that the student in this activity group would be “taught” social skills?
   Social skills would be taught in a manner congruent with the above description of how instruction is addressed in an OA-based group. In the author’s experience with similar children, it is the therapist’s in vivo modeling of social skills that offers the greater impact and potential for generalization. For example, students would often say to me, “Ms. Schultz, why do you say please this, and please that?” I replied, “Because that’s what I say when I ask someone to do something.” I observed that they liked my approach and started policing each other. For example, “You don’t use those kind of words around Ms. Schultz.” Or, in response to another student’s request, “You mean, would I please pass you the scissors!” However, I didn’t teach them not to use certain words or to say please back to me.

5. Why do you believe that group members were added progressively rather than all starting at once?
   ◦ Therapist can establish a solid rapport with two or three members in the beginning.
   ◦ When new members are added, the original students can assume a role of leadership.
   ◦ New members look to see how the others interact with the therapist.
   ◦ New members can see how the therapist interacts with the other students.
   ◦ Therapist can be more available to new members.
   ◦ Progression builds foundation of trust and rapport that is difficult to achieve otherwise.

6. Based on the learning activities, how would you set up the lunch activity based on OA theory?
   Consistency is very important for these students to acquire new ways of doing and reacting. The therapist can start setting up for lunch, and the students join in to help. Again, the therapist is doing little verbal directing. Talking can be disruptive to many students with emotional/behavioral disorders, while doing is much more easily understood and processed. Words should be minimal and easy to understand.
   For example, the therapist may begin to put a napkin at place where students are going to sit. When a student approaches or becomes interested, the therapist may just hand the rest of napkins to the student. When a student approaches or becomes interested, the therapist may begin to put a napkin at place where students are going to sit. When a student approaches or becomes interested, the therapist may begin to put a napkin at place where students are going to sit. If the student didn’t hand out the napkins after 2 or 3 minutes, the therapist would pick them up and lay them out.

7. What would the treatment goals be for the lunch group based on OA theory?
   Treatment goals during the lunch activity are consistent with those already described in previous answers. The objective is to increase sense of mastery in the moment, acquire awareness of self as an agent of change, begin to build a new repertoire of adaptive responses that are more satisfying, and have the potential to generalize to other activities/situations.

8. What are the essential elements of OA-based treatment as presented in this case study?
   The student is an agent of change. The therapist’s most powerful tool is therapeutic use of self. The therapist is an agent of the occupational environment in which therapy occurs. Behavior management or behavioral change is not the target of intervention. The target is an increase in sense of mastery and ability to self-generate adaptive responses that are modified/new and result in more satisfying outcomes to the student. The therapist’s function is to watch for the “window of opportunity” in which a new adaptive response can gently be introduced as an option for the student to “deal with the situation.” These options have to be strategically offered over time. For the intervention to take effect, it can not be instructive. The intervention has to be experiential and has to involve occupation that is meaningful to the student. The intervention has to naturalistically elicit an adaptive response and has to be delivered in a well-considered manner that is congruent with an OA-based treatment approach.

9. What is your description of an adaptive repertoire?
   The adaptive repertoire is the set of adaptive responses (both positive and negative) that the student has acquired over the years in his attempt to “deal with” his or her world. The most predictable response to challenging activities for this population is to either shut down, make a joke out of it, tear it up, or become angry. Each of these is an adaptive response. While the response is effective and counterproductive, it represents the repertoire the student has to drawn from. An OA-based approach is about helping the student expand that repertoire to include new ways of dealing with things. The more those new ways are offered within a real-world natural context, the greater the likelihood that they will become integrated as a new option within the repertoire.

10. How do you understand working with the student to become more adaptive versus helping the student adapt?
    The therapist who helps the student become more adaptive is developing his or her own resources that can be generalized and built upon. The therapist who helps the student adapt is helping the student to...
function within that particular setting and particular circumstance. OA-theory espouses that it is adaptiveness that empowers the individual to be the agent of change in how he or she responds to the challenges that are presented across the lifespan.

**Emma: Anxiety Disorder/Inpatient**

**Kristin Winston, PhD, OTR/L and Jamie Harmon, MS, OTR/L**

**Learning Activities**

1. In groups of three to four students, design a 45- to 60-minute therapeutic group session in the high school environment that would address Emma’s goal of wanting to return to part-time work. What model of practice will guide your choice of intervention approach? What would the goal of your group session be? What will your intervention look like? Design your group, including the following:
   - Frame of reference that will guide your session
   - An outline of the time frame, sequencing, and steps for the activity
   - Materials needed for the activity
   - Description of the activity and what you and the participants will be doing in the session
   - Discuss how you will conclude the group and any plans for a future group session around this goal

2. Given what you know about Emma’s sensory processing patterns (the Adolescent/Adult Sensory Profile indicates a pattern of sensory sensitivity), design a sensory diet for Emma that she can implement during the day at school. In addition, design sensory diet options for Emma when she is at home in the evening and on the weekends.

**Test Questions**

1. Which of the following frames of reference will be most beneficial for intervention planning for Emma once she returns to the high school environment?
   a. Acquisitional Frame of Reference and Psychosocial Frame of Reference
   b. Coping Frame of Reference and Sensory Integration Frame of Reference
   c. Coping Frame of Reference and Biomechanical Frame of Reference
   d. Sensory Integration Frame of Reference

2. Which of the following is not a primary goal of transition planning for adolescents under Part B of IDEA?
   a. Access to post-secondary education
   b. Improving academic skills
   c. Securing integrated employment
   d. Facilitating independent living

3. Part B of IDEA covers services for what population?
   a. Children birth to 21 years of age
   b. Children birth to 3 years of age
   c. Children 5 years to 21 years of age
   d. Children 3 years to 21 years of age

4. Which of the following assessments would be appropriate to gather additional information regarding Emma’s strengths and areas of concern?
   a. Sensory Processing Measure
   b. Children’s Assessment of Participation and Enjoyment (CAPE) and the Preferences for Activities of Children (PAC)
   c. Sensory Integration and Praxis Test
   d. Bruiniks Oseretsky Test of Motor Proficiency

5. If you choose to have Emma invite friends to participate in a group aimed toward her goals, according to the *Practice Framework*, which area of context would you be addressing?
   a. Physical context
   b. Cultural context
   c. Social context
   d. Personal context

6. Section 504 of the Rehabilitation Act includes all of the following except:
   a. Access to special education support
   b. Reasonable accommodations within the work and school environments
   c. Vocational rehabilitation services
   d. Prohibits discrimination on the basis of disability

7. To help Emma manage her sensory sensitivity, choose the least restrictive accommodation for taking tests and quizzes:
   a. Have Emma take tests and quizzes in a room by herself
   b. Have Emma try noise-cancelling headphones during tests and quizzes
   c. Provide extra time for Emma to take her tests and quizzes
   d. Provide a ball chair for Emma to sit on while taking tests and quizzes
e. You are working with Emma to develop routines around her school schedule such that she can begin to look at returning to part time work after school. According to the Practice Framework, routines are a part of what aspect of occupational therapy’s domain?

f. Client factors

g. Activity demands

h. Performance skills

i. Performance patterns

8. As a part of the initial plan for Emma to return to school, her schedule has been adjusted so that she is taking fewer classes for the first semester that she returns. She understands that this will mean that she will be taking classes in summer school to remain on target for graduation with her peers. In the coping frame of reference (Williamson & Szczepanski, 1999), this is an example of:

a. Providing appropriate feedback to Emma’s efforts at coping

b. Modifying the demands of the environment to match coping efforts

c. Enhancing Emma’s internal coping resources

9. Given the results of the COPM as a part of the occupational therapy evaluation, which area of transition planning would be most important to Emma?

a. Transportation needs

b. Friendship and socialization needs

c. Educational opportunities

d. Employment opportunities

Reference


Resources


Michael: Anoxic Brain Injury/Hippotherapy

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Hippotherapy Information

Hippotherapy is derived from the Greek word hippo, meaning horse. It is a treatment strategy that occupational therapists, physical therapists, and speech-language pathologists use as part of their integrated treatment plan in order to meet a patient's goals or functional outcomes. The movement that a horse provides is multidimensional and serves several purposes as a therapeutic intervention. One of these purposes is to simulate typical human gait patterns. When riding a horse, the weight shifts that a human pelvis experiences correlates with that of walking. Therefore, a child that is not ambulating independently can experience the movement that walking provides just by riding a horse. The warmth and shape of the horse helps promote stretching of lower extremities and mobilization of pelvis and hip joints. Furthermore, the dynamic surface that a horse provides affords children countless opportunities for postural readjustments in order to improve postural control and sitting balance.

General areas for treatment while using the horse include sensory processing, neuromuscular, cognitive, psychosocial, and developmental disabilities. All of these areas are assessed and treated so that children can work on improving skills needed in order to complete ADLs as independently as possible. Therapeutic horseback riding has also been shown to benefit children with disabilities, although it is distinctly different from hippotherapy (Snider, Korner-Bitensky, Kamman, Warner, & Saleh, 2007). Riding lessons serve as a recreational activity and teach children the skills needed in order to ride a horse, such as turning a horse or trotting. Conversely, hippotherapy uses the horse as a treatment modality to address functional limitations or impairments in children with disabilities.

In hippotherapy, different variables are changed in order to obtain the desired effect from the horse. Horses are specifically matched to each child based on the type of movement they possess. This movement translates to the child, which facilitates postural reactions in the frontal, sagittal, and transverse planes. In other words, based on what horse is chosen, the child can present with movement more anterior-posterior, lateral, rotational, or a combination depending on what movement is needed to progress toward meeting functional outcomes.

The speed of the horse can also be altered to challenge the child's postural system and elicit righting reactions. This can be achieved by transitioning to and from the halt, walk, and trot gait patterns or by subtle speed changes within a specific gait. More specifically, horses average about 55 strides per minute at a walk, which is translated directly to the child's postural system. If a session lasts between 30 to 45 minutes, a child can experience anywhere between 3000 to 5000 strides, which simulates human walking (Clayton, 2002). These data alone demonstrate the impact that equine movement can have on a child that is learning to walk or working toward increasing strength and stability.

Utilizing equine movement with changes in direction challenges a child's postural reactions continuously throughout a session. Changes in direction can be as simple as weaving in and out of cones. Cones spaced closely together will make a child work harder toward maintaining midline on the horse. Similarly, completing circles at varying diameters can elicit the same challenge. Completing different patterns in the arena to promote various responses are known as school figures. School figures are graded appropriately by the treating therapist based on responses seen from the child.
Changes in position while on the horse are referred to as developmental positions. These positions are utilized throughout a session for assessment and treatment while using the movement of the horse. The goal of developmental positions is to challenge a child’s motor and sensory system in order to achieve functional gains. A child can be seen sitting forward, sitting backward, lying prone over the horse’s barrel or back, lying supine on the horse’s back, quadruped, tall kneeling, or even standing. Typically, the focus is on assessing how a child transitions between these positions rather than maintaining one position for a prolonged period of time.

Lastly, the terrain upon which a horse walks can also be altered in order to achieve varying responses from a child. When a horse walks on sand, it is very quiet and its impact is absorbed with each step. Conversely, if a horse walks on a hard surface such as wood or concrete, its gait is more concussive and loud. This variable contributes to the sensory experience the horse provides a child. The more concussive the impact or gait, the more alerting the horse is to the child. On the other hand, if a horse walks on a very smooth terrain, it is a more relaxing and calming experience for the child.

In addition to all of these variables, the child participates in various activities which further challenges them to meet their goals. Knowing that play is a primary occupation for children, an OT has to be creative in order to motivate the child to engage in a given task (AOTA, 2008). Imaginary play and play themes can be integrated into the session to facilitate motor, cognitive, or sensory responses. Examples of common activities include, but are not limited to reaching across midline, weightbearing, processing, sequencing, visual scanning, and bilateral coordination activities.

Refer to the Michael case in Chapter 7 of the textbook to see how integrating hippotherapy into a treatment plan can make an impact of the functioning level of a child with an anoxic brain injury.

References