

Occupational Therapy Interventions for Adults With Stroke

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MeSH TERMS

- activities of daily living
- decision making
- evidence-based practice
- occupational therapy
- review literature as topic
- stroke treatment outcomes

Evidence Connection articles provide a clinical application of systematic reviews developed in conjunction with the American Occupational Therapy Association's (AOTA's) Evidence-Based Practice project. The clinical condition discussed in this inaugural Evidence Connection article is adults with stroke. Findings from the systematic reviews on this topic were published in the January/February 2015 issue of the *American Journal of Occupational Therapy* and in AOTA's *Occupational Therapy Practice Guidelines for Adults With Stroke* (Wolf & Nilsen, 2015). Each article in this series will summarize the evidence from the published reviews on a given topic and presents an application of the evidence to a related clinical case. Evidence Connection articles illustrate how the research evidence from the reviews can be used to inform and guide clinical decision making.

Nilsen, D., Gillen, G., Arbesman, M., & Lieberman, D. (2015). Evidence Connection—Occupational therapy interventions for adults with stroke. *American Journal of Occupational Therapy*, 69, 6905395010. <http://dx.doi.org/10.5014/ajot.2015.695002>

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Jorge S., a 45-yr-old Hispanic man, owns a dog-walking business with two employees. He lives with his partner in a two-bedroom elevator apartment in an urban area. They have no children, but they have a large social network. Jorge was transferred from the acute care floor to the inpatient rehabilitation unit (IRU) with a diagnosis of a right middle cerebral artery infarct and a past medical history significant for hypertension.

Occupational Therapy Assessment and Findings

Jameela (Jorge's occupational therapist) used the Canadian Occupational Performance Measure (COPM; Law et al., 2014), among other tools, to generate Jorge's occupational profile. Jorge identified the following five occupations as being most important to him: (1) bathing and dressing himself, (2) taking care of his bathroom needs, (3) meal preparation, (4) return to work, and (5) playing cards with friends. Of a possible score of 10, Jorge scored his performance on the five identified occupations from 3 to 5, and he reported satisfaction scores that ranged from 1 to 2.

Guided by the occupational profile, Jorge's ability to perform self-care activities was assessed using the FIM™ (Uniform Data System for Medical Rehabilitation, 1997) and observation of a simple meal preparation task (see Table 1 for assessment results). Decreased use of the left dominant upper extremity (UE) and left unilateral spatial neglect were significant limiting factors during task performance. Performance skills and client factors were evaluated using the following assessments:

- The Fugl-Meyer Assessment (Fugl-Meyer, Jääskö, Leyman, Olsson, & Steglind, 1975) and the Action Research Arm Test (Lyle, 1981), to further assess arm and hand neuromuscular–skeletal functions, sensory functions, and motor skills

Table 1. Assessment Data

Assessment	Evaluation	Discharge
FIM		
Feeding	4	6
Grooming	4	6
Bathing	3	4
UB dressing	4	6
LB dressing	3	5
Toileting	3	5
Bladder	7	7
Bowel	7	7
Transfers	4	5
Locomotion	3	5
FMA		
UE-M	39/66	58/66
UE-S	8/12	10/12
ARAT	37/57	46/57
CBS		
OT	15/30	10/30
Self-report	0/30	5/30
BDI-II	2/63	2/63

Note. ARAT = Action Research Arm Test; BDI-II = Beck Depression Inventory-II; CBS = Catherine Bergego Scale; FMA = Fugl-Meyer Assessment; LB = lower body; M = motor; OT = occupational therapist; S = sensory; UB = upper body; UE = upper extremity.

- The Catherine Bergego Scale (Azouvi et al., 2003), to further evaluate the impact of unilateral spatial neglect on daily function as well as Jorge's awareness of the impairment
 - The Beck Depression Inventory-II (Beck, Steer, & Brown, 1996), to assess Jorge's psychological status.
- Assessment results revealed difficulty with combining left shoulder, elbow, and forearm motions for performance of efficient forward, side, and overhead reaching; decreased ability to reach, grasp, and transport objects using the left UE; moderate left unilateral neglect with poor awareness; diminished tactile sensation of the left arm and hand; and minimal evidence of emerging depression (see Table 1).

On the basis of Jorge's primary areas of interest, assessment results, and the anticipated discharge environment (i.e., home with supervision), treatment goals were developed to target increasing independence in the performance of self-care skills, simple meal preparation, work-related activities, and the leisure activity of playing cards. Jameela reviewed the evidence from the January/February 2015 issue of the *American Journal of Occupational Therapy* and the recommendations from the *Occupational Therapy Practice Guidelines for Adults With Stroke* (Wolf & Nilsen, 2015) and found the following information:

- Moderate evidence from several studies supports the use of occupation-based interventions to improve performance of activities of daily living (ADLs) in the inpatient setting.

- Moderate to strong evidence also supports the use of activity- or occupation-based interventions to increase participation in leisure activities.
- Strong evidence supports visual scanning training (VST) for people with stroke.
- In the area of motor impairment, strong evidence supports using repetitive task training (RTP) to improve UE function, balance, and mobility and activity and participation for clients with motor impairments.
- Moderate evidence supports combining a task-oriented training intervention such as RTP with a cognitive strategy such as action observation (AO) to improve UE function.

Occupational Therapy Intervention

On the basis of the evidence, Jameela chose the following interventions to maximize Jorge's participation in life tasks:

- Occupation-based interventions to improve ADLs.
- RTP to enhance arm and hand function to support engagement.
- VST to improve performance and compensate for unilateral neglect.
- AO combined with task practice to promote self-directed independent practice.¹

Session 1 (A.M.)

Because Jorge identified several self-care occupations as very important, Session 1 targeted specific task practice of two of Jorge's chosen occupations (bathing and dressing) in his hospital room. Jameela began the session by describing the two occupations that would be practiced and asked Jorge to predict (awareness training) how long each would take and how much assistance he would need. Jorge predicted that each task would take approximately 10 min and that he would require supervision. Jameela proceeded to engage Jorge in task practice, providing verbal and physical prompting as needed. Prompts were needed to encourage use of the left limb, to locate items on the left side of the environment, and for overall task completion.

After task completion, Jameela asked Jorge to reflect on his performance. Jameela assisted Jorge with comparing his actual and predicted task performance. She highlighted the discrepancies. Knowing the evidence supports the use of VST, she realized that Jorge required improved awareness to use such strategies. Therefore, awareness training became an integral part of her intervention plan.

¹This article provides examples of the application of the AOTA *Occupational Therapy Practice Guidelines for Adults With Stroke* (Wolf & Nilsen, 2015); it does not encompass the full scope of occupational therapy practice for stroke survivors.

Session 2 (P.M.)

Session 2 took place in the occupational therapy clinic and focused on improving arm and hand function for engagement in occupation. Jorge's interests drove the selection of tasks used for RTP. The goal was to maximize repetitions of reaching, grasping, transporting or manipulating, and releasing various meaningful task objects as follows:

- Manipulation of a computer mouse; specifically, organizing icons on the screen of Jorge's work laptop, entering data onto a spreadsheet, and so forth.
- Manipulation of bathing and grooming items; specifically, organizing items in a basin, opening and closing containers, and so forth.
- Playing cards; specifically, dealing cards, flipping cards, stacking cards, and so forth.

Jameela graded the RTP to present the just-right challenge. Examples of gradation include increasing the number of items manipulated; changing the location of items in the environment to encourage reaching over greater distances and in different planes of motion; changing the size, shape, and weight of objects; and varying the speed requirements.

Session 3 (A.M.)

Jameela continued to address awareness building using task prediction methods and videotape feedback. She introduced the concept of VST to Jorge. Because he was amenable, Jameela taught these strategies in the context of Jorge's work-related activities. Jameela began with scanning printed invoices, Jorge's computer screen, and a desk space. These strategies were also encouraged during self-care, card playing, and meal preparation.

Session 4 (P.M.)

Jameela met Jorge in the ADL kitchen. She had Jorge identify a favorite afternoon meal. The occupation-based intervention of making a chopped salad was chosen because Jorge identified it as meaningful. Jameela set up the task to encourage the use of VST and encouraged Jorge to use his left arm and hand to assist throughout the session. For example, Jameela placed necessary items on both sides of the table and encouraged an organized visual search of the table, and she provided a vegetable peeler with a built-up handle and encouraged Jorge to use his left hand to peel the vegetables. He was also encouraged to use his left hand to perform the multiple repetitions required for chopping the vegetables.

In addition to individual sessions, Jameela provided Jorge with specific opportunities for self-directed independent practice. She provided an individualized structured program that Jorge carried out with the help of his partner outside of individual sessions. Program components included

- Watching AO videos on his computer, followed by actual task practice of manipulating cooking utensils and grooming items, and
- Providing an occupation box of items related to Jorge's identified goal areas, such as a deck of cards, dog brush, can opener, pen and paper, coins, and utensils and encouraging him to engage in RTP using these items during down time.

Jameela provided Jorge and his partner with a practice log and encouraged them to record the independent practice sessions daily. The log was reviewed by Jameela and Jorge, and the AO and RTP training was progressed as appropriate.

Conclusion

Jorge met the majority of his goals by the time he was discharged from the IRU. Most important, his performance and satisfaction scores on the COPM improved, as did his scores on measures of client factors and performance skills. Jorge's success was based on occupational therapy interventions that were evidence based, occupation based, and client centered.

Jorge's additional occupational performance goals will continue to be addressed by home-based and outpatient occupational therapy, including community mobility. Jorge and his partner were educated about the signs and symptoms of depression and were provided with resources in the community to address these needs if they emerge. ▲

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