

Occupational Therapy Home Modification Assessment and Intervention

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Evidence Connection articles describe a clinical application of a systematic review developed in conjunction with the American Occupational Therapy Association's Evidence-Based Practice (EBP) Project. This Evidence Connection provides a case report of a client referred to occupational therapy for home modification assessment and intervention, applying the evidence from the systematic review of home modifications conducted in conjunction with the EBP Project. The client received in-home occupational therapy after side effects of liver disease resulted in increased falls within her home.

Somerville, E., Smallfield, S., Stark, S., Seibert, C., Arbesman, M., & Lieberman, D. (2016). Evidence Connection—Occupational therapy home modification assessment and intervention. *American Journal of Occupational Therapy*, 70, 7005395010. <http://dx.doi.org/10.5014/ajot.2016.705002>

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Evidence Connection articles describe a clinical application of systematic reviews developed in conjunction with the American Occupational Therapy Association's (AOTA's) Evidence-Based Practice Project. Management of chronic conditions is key to achieving the triple aim of “(1) improving the individual experience of care, (2) improving the health of populations, and (3) reducing the per capita costs of care for populations” (Berwick, Nolan, & Whittington, 2008, p. 760). Occupational therapy practitioners have the education and knowledge to provide occupational therapy interventions to people with various diagnoses and chronic clinical conditions. Because of the increasing incidence and cost of chronic conditions, using the evidence to support the role of occupational therapy practitioners as leaders of care management makes sense. These interventions enable clients to restore and maintain participation in a variety of occupations and can be incorporated into comprehensive care systems (Arbesman, Lieberman, & Metzler, 2014).

This Evidence Connection discusses a woman with a chronic condition who was referred to occupational therapy for home evaluation and interventions. Findings from the systematic review on home modifications were published in AOTA's *Occupational Therapy Practice Guidelines for Home Modifications* (Seibert, Smallfield, & Stark, 2014) and in a systematic review in the *American Journal of Occupational Therapy* (Stark, Keglovits, Arbesman, & Lieberman, in press). Evidence Connection articles illustrate how the research evidence from the reviews can be used to inform and guide clinical decision making.

Clinical Case

Joanna was a 75-yr-old woman recently diagnosed with liver disease. She was experiencing the side effects of liver toxicity, including wandering behaviors.

Table 1. Results of the Evaluation of Personal Factors

Domain	Assessment	Results
Vision	Lighthouse Near Visual Acuity Chart (Ferris, Kasso, Bresnick, & Bailey, 1982)	20/80 in both eyes
Range of motion	Upper-extremity gross range of motion	WFL
Strength	Upper-extremity gross manual muscle testing	WFL
Fine motor coordination	Finger–nose–finger screening	WFL
Balance and functional mobility	Performance Oriented Mobility Assessment (Tinetti, 1986)	23 (medium fall risk)
Fall history	Informal interview	4 falls/year

Note. WFL = within functional limits.

Comorbid conditions included osteoarthritis and cataracts (the latter had recently been treated surgically). She lived with her husband and grandson in a single-family home and had limited financial resources. After multiple falls in her home, Joanna was referred by her Area Agency on Aging (AAA) case manager to a university-based community occupational therapy practice for in-home services to address impaired function and evaluate and address home hazards. Stephanie was the occupational therapist assigned to work with Joanna, and she obtained a referral from Joanna’s primary care physician.

Occupational Therapy Evaluation and Findings

Stephanie provided five occupational therapy in-home visits, including the initial evaluation visit. Stephanie’s services were billed through Medicare Part B as outpatient occupational therapy provided in the home (Centers for Medicare and Medicaid Services, 2015). Each visit lasted approximately 90 min. Stephanie followed the *Occupational Therapy Practice Guidelines for Home Modifications* (Siebert et al., 2014) to plan and implement intervention.

During Visit 1, Stephanie used standardized assessments (Table 1) to evaluate Joanna’s personal factors and conducted the In-Home Occupational Performance Evaluation (I–HOPE; Stark, Somerville, & Morris, 2010) to measure person–environment fit in the home. Joanna’s two most important results on the I–HOPE, which became the priorities for intervention, are shown in Table 2.

Table 2. Two Most Important Initial I–HOPE Results

Problematic Activity	Performance Score	Satisfaction Score	Environmental Barriers	Barrier Score
1. Taking a shower	3	3	Lack of seating surface Lack of grab bar	1 1
2. Transporting laundry	4	4	Lack of railing along basement stairs increases difficulty when carrying laundry	2

Note: I–HOPE scores are on 5-point Likert-type scales as follows: For Performance, 1 = *unable to perform at all* and 5 = *able to perform without difficulty*; for Satisfaction, 1 = *not at all satisfied with performance* and 5 = *very satisfied with performance*; and for Barriers, 5 = *no activity, unable to assist* and 0 = *no assistance needed* (Keglovits, Somerville, & Stark, 2015).

Occupational Therapy Intervention

After completing the evaluation, Stephanie used task analysis strategies to identify the barriers to Joanna’s occupational performance and solutions that would compensate for her functional limitations, consistent with the personal and environmental factors unique to her situation (Stark, Somerville, Keglovits, Smason, & Bigham, 2015). Stephanie used motivational interviewing strategies (Cummings, Cooper, & Cassie, 2009) to help Joanna understand the need for an intervention to promote optimal occupational performance and safety in the home.

Visit 2: Intervention

Together, Stephanie and Joanna developed an intervention plan to address her occupational performance problems of taking a shower and transporting laundry (Table 3). They also discussed Joanna’s falls and identified three primary fall-related hazards: (1) clutter in pathways, (2) insufficient lighting at night, and (3) lack of a railing along the basement stairs. Together they developed a plan to reduce the fall hazards and manage the risk associated with each hazard.

Joanna decided to enlist the help of her grandson to reduce the clutter and agreed to install battery-operated motion sensor night-lights. After the visit, Stephanie worked with the AAA’s approved contractor to schedule a time for installation of the modifications through their home modification program.

Visits 3 and 4: Intervention

Stephanie, the contractor, and Joanna confirmed the plan to install a fold-up shower bench, grab bar in the shower, and railing along the basement stairs. After installation,

Table 3. Solutions Presented and Chosen for the Two Most Important Activities

Problematic Activity	Solutions Presented	Solution Chosen (Rationale)
1. Taking a shower	<ol style="list-style-type: none"> 1. Install standard shower seat and grab bar 2. Install fold-up shower seat and grab bar 3. Remove shower doors and install tub transfer bench and grab bar 	2. Install fold-up shower seat and grab bar (accommodated family)
2. Transporting laundry	<ol style="list-style-type: none"> 1. Install railing along basement stairs 2. Relocate needed items upstairs (washer and dryer) 3. Have spouse assist with transporting laundry up and down stairs 	1. Install railing along basement stairs (allowed Joanna to complete task independently)

Stephanie trained Joanna to perform the activities safely with the new modifications. Stephanie also mounted the motion sensor night-lights in the bedroom and hallway to allow for increased visibility at night.

Joanna and her husband were also very concerned about her intermittent wandering and falling on the basement stairs during periods of liver toxicity. They decided that a permanent, wall-mounted, self-closing gate should be installed to prevent Joanna from being able to wander downstairs during periods of confusion. They planned to purchase and install the gate themselves.

Visit 5: Intervention and Reevaluation

Stephanie ensured that the gate to the basement stairs was properly installed and functioning as intended. Joanna reported she had one episode of wandering but was unable to go downstairs because she was stopped by the gate. Finally, Stephanie reviewed all the previously implemented equipment and fall prevention strategies and collected posttreatment scores on the I-HOPE (Table 4).

Conclusion

Through the use of an evidence-based, occupation-focused, and client-centered home modification assessment and intervention process, Joanna improved her ability to perform activities and decreased her risk of falling. The installation of a shower seat and grab bar increased her ability to shower safely and independently, and the railing along the stairs to the basement allowed her to complete laundry tasks safely and efficiently without assistance from her spouse. Additional fall hazards of cluttered pathways, insufficient lighting at night, and wandering during periods of confusion were also addressed with client-centered

Table 4. Postintervention I-HOPE Results

Problematic Activity	Performance Score	Satisfaction Score	Environmental Barriers	Barrier Score
1. Taking a shower	5	5	No barrier	0
2. Transporting laundry	5	4	No barrier	0

strategies. As a result, her I-HOPE assessment scores improved for each of her priority occupations. ▲

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