

Occupational Therapy Interventions for Productive Aging Among Community-Dwelling Older Adults

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Evidence Connection articles provide clinical application of systematic reviews developed in conjunction with the American Occupational Therapy Association's (AOTA's) Evidence-Based Practice Project. In this Evidence Connection article, we describe a case report of an older adult who was referred to outpatient occupational therapy services due to chronic back pain from herniated discs. Findings from the systematic review of occupational therapy for community-dwelling older adults were published in the July/August 2018 issue of the *American Journal of Occupational Therapy* (Berger et al., 2018; Elliott & Leland, 2018; Hunter & Kearney, 2018; Liu et al., 2018; Smallfield & Lucas Molitor, 2018a, 2018b) and in the American Occupational Therapy Association's *Occupational Therapy Practice Guidelines for Productive Aging for Community-Dwelling Older Adults*. Each article in the Evidence Connection series summarizes the evidence from the published reviews on a given topic and presents an application of the evidence to a related clinical case. These articles illustrate how the research evidence from the reviews can be used to inform and guide clinical decision making.

Clinical Case

Martin, age 68 yr, was referred to outpatient occupational therapy because of chronic back pain from herniated lumbar discs. He had undergone bilateral knee replacement surgery 5 mo earlier and was able to return to his regular daily routines and previous level of performance. His back pain limited his ability to progress in his lower extremity rehabilitation program and return to work. He self-reported no falls in the past 5 yr.

Occupational Therapy Assessments and Findings

Martin's occupational therapist, David, conducted the assessments and completed the occupational profile, which revealed the following information:

- Martin and his wife live in a rural agricultural community 20–30 mi from the nearest health care services, including fitness gyms. His home is in a northern climate with snowy and icy winters that limit outdoor mobility.
- Martin's bedroom and bathroom were located on the second floor of his home, and his stairs lacked hand railings. He had temporarily relocated to a guest room on the main level, which had limited floor space, especially by the toilet, which made navigation difficult for him.
- In the bathroom, Martin had a shower chair and a toilet riser but lacked grab bars and a long shower hose.
- Martin's wife assisted with self-care and completed all home management tasks, and his four children lived a distance away but came to assist as needed.
- Martin was employed in basement remodeling, which included heavy lifting, stooping, reaching, and working with handheld power tools. He was also a seasonal semitrailer truck driver for local farms.

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- Martin's interests included being a volunteer fire department chief, which he had done for 40 yr; spending time at the lake and with his family; watching sporting events; attending religious services; and participating in wood-working activities.
- Previous performance patterns included getting up early, completing self-care tasks, eating breakfast, packing his lunch, driving to work, and performing work activities, often in a 10-hr day.

Over the previous 3 mo, Martin had become depressed because he was unable to leave the house, work, or socialize with community members. The pain, depressive symptoms, and decrease in daytime activity levels disrupted his sleep patterns. Martin's goals were to manage his chronic back pain, ambulate without an assistive device, improve balance and safe mobility, improve his sleeping patterns, return to driving a semitrailer truck, and participate more fully in social and leisure activities. Additional assessment results are presented in [Table 1](#).

Occupational Therapy Intervention

Martin attended 15 of 16 scheduled occupational therapy sessions over 8 wk. He cancelled the final session because he was able to return to work driving a semitrailer truck part time, which conflicted with his last scheduled intervention session. The sessions included a multicomponent approach to intervention, specifically using chronic disease self-management, cognitive-behavioral sleep strategies, home modification, establishment of a physical exercise routine, and education on strategies to improve social and leisure participation. The following interventions are example options that may be implemented with Martin.

Intervention 1

Martin attended a modified chronic disease self-management program (CDSMP), which he completed during one of the two weekly intervention sessions. The modified CDSMP was a group intervention in which Martin learned problem solving related to his health condition, action planning, and decision making. Topics included medication

Table 1. Assessment Findings

Assessment	Findings
Occupations (assessed through clinical observations and interview)	<ul style="list-style-type: none"> • Martin demonstrated LE weakness as evidenced by the need to use his UEs to push up to rise from all surfaces. • He was independent in transfers but demonstrated limited functional mobility during simulated home activities. • He used significant effort to stand up from a recliner chair using both UEs for assistance and increased time to ambulate, and he held onto furniture and walls for stability. • He completed ADLs with increased time and supervision for safety. Martin reported not performing IADLs except for preparation of light meals using the countertop for stability when standing and walking. • Martin does not have a physical fitness routine and does not want to use an assistive device for mobility in public. He rates his typical daily pain as a 6 on a 0–10 visual analog scale.
COPM	<ul style="list-style-type: none"> • The COPM was used to assist in completion of Martin's occupational profile (AOTA, 2017; Law et al., 2019). • His Performance score was 2 out of 10, and his Satisfaction score was 1 out of 10. • Martin was very dissatisfied with his work performance, lack of sleep, decreased functional mobility in the home and community, and limited social participation.
ACS	<ul style="list-style-type: none"> • Martin completed the recovery version of the ACS (Baum & Edwards, 2008). Of the 89 activities in the ACS, Martin reported previously participating in 37 (15 instrumental, 8 low-demand leisure, 5 high-demand leisure, and 9 social). • His current performance included participating in 19 activities (8 instrumental, 6 low-demand leisure, 1 high-demand leisure, and 4 social), or 51% of his previous activity level.
PSQI	<ul style="list-style-type: none"> • Martin scored 9 on the PSQI, a 21-item measure of sleep quality in adults, in which a score of ≥ 5 indicates poor sleep quality (Buysse et al., 1989). He reported getting 5 hr of sleep per night because of pain and frequent awakenings to use the bathroom.
Tinetti Balance Assessment Tool	<ul style="list-style-type: none"> • The Tinetti Balance Assessment Tool is a measure of fall risk in older adults (Tinetti et al., 1986). Martin scored 20 out of 28 points, in the moderate fall risk range (19–24). He had the most difficulty with standing balance when nudged or with eyes closed, with turning around, and with walking without an assistive device.

Note. ACS = Activity Card Sort; ADLs = activities of daily living; AOTA = American Occupational Therapy Association; COPM = Canadian Occupational Performance Measure; IADLs = instrumental activities of daily living; LE = lower extremity; PSQI = Pittsburgh Sleep Quality Index; UE = upper extremity.

management, communication with health care professionals and family members, nutrition, and exercise to improve physical functioning. Martin was taught psychoeducational and coping strategies to manage symptoms such as pain and fatigue (Garvey et al., 2015; Self-Management Resource Center, 2019).

Intervention 2

David completed an evaluation of Martin's home and discussed several strategies to improve safety and independent mobility with improved balance throughout the home, including problem solving, home modification (addition of stair hand rails and installation of bathroom grab bars), energy conservation, and fall-recovery techniques (Gitlin et al., 2006; Szanton et al., 2011). David assisted Martin in establishing a home physical activity routine. This routine included specific bed- and chair-rising resistive exercises performed 3 times per week and a walking program that Martin could continue and progress at his own pace (Alexander et al., 2001; Taylor et al., 2003).

Intervention 3

David used one-to-one multicomponent cognitive-behavioral intervention strategies to address Martin's sleep impairments. He educated Martin on sleep hygiene strategies and progressive muscle relaxation to promote sleep. Martin identified his sleep goals and collaborated with David to establish a sleep schedule, including a sleep log to monitor his sleep patterns (Lichstein et al., 2001; McCrae et al., 2007; McCurry et al., 1998). David and Martin also reviewed the effectiveness of the home modifications and the accuracy and effectiveness of the home exercise program.


Intervention 4

David collaboratively discussed with Martin engagement in a community-based group intervention as a potential strategy to increase social engagement (Creswell et al., 2012; Matuska et al., 2003; Ollonqvist et al., 2008; Routasalo et al., 2009). However, Martin decided to focus on the other intervention strategies first before adding this intervention to his schedule because of the driving distance to the group. In this session, Martin and David also reviewed Martin's sleep log and progression toward his sleep goals.

Conclusion

Through the use of these evidence-based and client-centered interventions, Martin met his goals after completing 8 wk of outpatient occupational therapy services. Martin reported that he resumed his truck-driving work routine on a part-time basis. He improved his balance and no longer ambulated with an assistive device, and he resumed using his upstairs bedroom and bathroom. Martin now performs activities of daily living tasks independently and in a timely manner. He prepares his breakfast, packs his lunch, and dries the dishes in the kitchen independently without safety concerns. He also reports that he assists with washing, drying, and folding his work clothes. He has integrated 15 min of physical exercise into his daily routine each morning and evening.

Martin's Canadian Occupational Performance Measure (Law et al., 2019) scores improved to a 7 out of 10 on the Performance scale and 7 out of 10 on the Satisfaction scale. On the Activity Card Sort (Baum & Edwards, 2008), Martin increased the number of occupations in which he participated to 36 out of 37 (14 of 15 instrumental, 8 of 8 low-demand leisure, 5 of 5 high-demand leisure, and 9 of 9 social activities). Martin's sleep quality, as measured by the Pittsburgh Sleep Quality Index (Buysse et al., 1989), improved to a score of 4 out of 21, which indicated that he was no longer at risk for poor sleep. He increased his total sleep time to 6–7 hr per night by adjusting the time he routinely went to bed each night and by decreasing fluid intake in the evening to reduce the number of awakenings to use the bathroom. He rates his typical daily pain as a 3 on a 0–10 visual analog scale. Martin's score on the Tinetti Balance Assessment Tool (Tinetti et al., 1986) improved from 20 out of 28 on initial evaluation to 25 on discharge, indicating low fall risk. He also reported no falls since beginning the intervention.

This article provided an example of how to apply evidence from systematic reviews on productive aging to inform and guide clinical decision making (Berger et al., 2018; Elliott & Leland, 2018; Hunter & Kearney, 2018; Liu et al., 2018; Smallfield & Lucas Molitor, 2018a, 2018b). For further evidence-based information on productive aging, see the American Occupational Therapy Association's (AOTA's) *Occupational Therapy Practice Guidelines for Productive Aging for Community-Dwelling Older Adults* (Smallfield et al., 2019) or the AOTA website (<https://www.aota.org/Practice/Productive-Aging.aspx>). 

References

- Alexander, N. B., Galecki, A. T., Grenier, M. L., Nyquist, L. V., Hofmeyer, M. R., Grunawalt, J. C., . . . Fry-Welch, D. (2001). Task-specific resistance training to improve the ability of activities of daily living-impaired older adults to rise from a bed and from a chair. *Journal of the American Geriatrics Society*, *49*, 1418–1427. <https://doi.org/10.1046/j.1532-5415.2001.4911232.x>
- American Occupational Therapy Association. (2017). AOTA occupational profile template. *American Journal of Occupational Therapy*, *71*(Suppl. 2), 7112420030.
- Baum, C. M., & Edwards, D. F. (2008). *Activity Card Sort*. Bethesda, MD: AOTA Press.
- Berger, S., Escher, A., Mengle, E., & Sullivan, N. (2018). Effectiveness of health promotion, management, and maintenance interventions within the scope of occupational therapy for community-dwelling older adults: A systematic review. *American Journal of Occupational Therapy*, *72*, 7204190010. <https://doi.org/10.5014/ajot.2018.030346>
- Buysse, D. J., Reynolds, C. F., Monk, T. H., III, Berman, S. R., & Kupfer, D. J. (1989). The Pittsburgh Sleep Quality Index: A new instrument for psychiatric practice and research. *Psychiatry Research*, *28*, 193–213. [https://doi.org/10.1016/0165-1781\(89\)90047-4](https://doi.org/10.1016/0165-1781(89)90047-4)
- Creswell, J. D., Irwin, M. R., Burklund, L. J., Lieberman, M. D., Arevalo, J. M., Ma, J., . . . Cole, S. W. (2012). Mindfulness-based stress reduction training reduces loneliness and pro-inflammatory gene expression in older adults: A small randomized controlled trial. *Brain, Behavior, and Immunity*, *26*, 1095–1101. <https://doi.org/10.1016/j.bbi.2012.07.006>
- Elliott, S., & Leland, N. E. (2018). Occupational therapy fall prevention interventions for community-dwelling older adults: A systematic review. *American Journal of Occupational Therapy*, *72*, 7204190040. <https://doi.org/10.5014/ajot.2018.030494>
- Garvey, J., Connolly, D., Boland, F., & Smith, S. M. (2015). OPTIMAL, an occupational therapy led self-management support programme for people with multimorbidity in primary care: A randomized controlled trial. *BMC Family Practice*, *16*, 59. <https://doi.org/10.1186/s12875-015-0267-0>
- Gitlin, L. N., Winter, L., Dennis, M. P., Corcoran, M., Schinfeld, S., & Hauck, W. W. (2006). A randomized trial of a multicomponent home intervention to reduce functional difficulties in older adults. *Journal of the American Geriatrics Society*, *54*, 809–816. <https://doi.org/10.1111/j.1532-5415.2006.00703.x>
- Hunter, E. G., & Kearney, P. J. (2018). Occupational therapy interventions to improve performance of instrumental activities of daily living for community-dwelling older adults: A systematic review. *American Journal of Occupational Therapy*, *72*, 7204190050. <https://doi.org/10.5014/ajot.2018.031062>
- Law, M., Baptiste, S., Carswell, A., McColl, M., Polatajko, H., & Pollock, N. (2019). Canadian Occupational Performance Measure (5th ed., rev.) Altona, Manitoba: COPM Inc.
- Lichstein, K. L., Riedel, B. W., Wilson, N. M., Lester, K. W., & Aguillard, R. N. (2001). Relaxation and sleep compression for late-life insomnia: A placebo-controlled trial. *Journal of Consulting and Clinical Psychology*, *69*, 227–239. <https://doi.org/10.1037/0022-006X.69.2.227>
- Liu, C. J., Chang, W.-P., & Chang, M. C. (2018). Occupational therapy interventions to improve activities of daily living for community-dwelling older adults: A systematic review. *American Journal of Occupational Therapy*, *72*, 7204190060. <https://doi.org/10.5014/ajot.2018.031252>
- Matuska, K., Giles-Heinz, A., Flinn, N., Neighbor, M., & Bass-Haugen, J. (2003). Brief Report—Outcomes of a pilot occupational therapy wellness program for older adults. *American Journal of Occupational Therapy*, *57*, 220–224. <https://doi.org/10.5014/ajot.57.2.220>
- McCrae, C. S., McGovern, R., Lukefahr, R., & Stripling, A. M. (2007). Research Evaluating Brief Behavioral Sleep Treatments for Rural Elderly (RESTORE): A preliminary examination of effectiveness. *American Journal of Geriatric Psychiatry*, *15*, 979–982. <https://doi.org/10.1097/JGP.0b013e31813547e6>
- McCurry, S. M., Logsdon, R. G., Vitiello, M. V., & Teri, L. (1998). Successful behavioral treatment for reported sleep problems in elderly caregivers of dementia patients: A controlled study. *Journals of Gerontology, Series B: Psychological Sciences and Social Sciences*, *53B*, P122–P129. <https://doi.org/10.1093/geronb/53B.2.P122>
- Ollonqvist, K., Palkeinen, H., Aaltonen, T., Pohjolainen, T., Puukka, P., Hinkka, K., & Pöntinen, S. (2008). Alleviating loneliness among frail older people—Findings from a randomised controlled trial. *International Journal of Mental Health Promotion*, *10*, 26–34. <https://doi.org/10.1080/14623730.2008.9721760>
- Routasalo, P. E., Tilvis, R. S., Kautiainen, H., & Pitkala, K. H. (2009). Effects of psychosocial group rehabilitation on social functioning, loneliness and well-being of lonely, older people: Randomized controlled trial. *Journal of Advanced Nursing*, *65*, 297–305. <https://doi.org/10.1111/j.1365-2648.2008.04837.x>
- Self Management Resource Center. (2019). *Chronic disease self-management (CDSMP)*. Retrieved from <https://selfmanagementresource.com/programs/small-group/chronic-disease-self-management/>
- Smallfield, S., Elliott, S., & Leland, N. (2019). *Occupational therapy practice guidelines for productive aging for community-dwelling older adults*. Bethesda, MD: AOTA Press.
- Smallfield, S., & Molitor, W. L. (2018a). Occupational therapy interventions addressing sleep for community-dwelling older adults: A systematic review. *American Journal of Occupational Therapy*, *72*, 7204190030. <https://doi.org/10.5014/ajot.2018.031211>

- Smallfield, S., & Molitor, W. L. (2018b). Occupational therapy interventions supporting social participation and leisure engagement for community-dwelling older adults: A systematic review. *American Journal of Occupational Therapy, 72*, 7204190020. <https://doi.org/10.5014/ajot.2018.030627>
- Szanton, S. L., Thorpe, R. J., Boyd, C., Tanner, E. K., Leff, B., Agree, E., . . . Gitlin, L. N. (2011). Community aging in place, advancing better living for elders: A bio-behavioral-environmental intervention to improve function and health-related quality of life in disabled older adults. *Journal of the American Geriatrics Society, 59*, 2314–2320. <https://doi.org/10.1111/j.1532-5415.2011.03698.x>
- Taylor, L., Whittington, F., Hollingsworth, C., Ball, M., King, S., Patterson, V., . . . Neel, A., Jr. (2003). Assessing the effectiveness of a walking program on physical function of residents living in an assisted living facility. *Journal of Community Health Nursing, 20*, 15–26. https://doi.org/10.1207/S15327655JCHN2001_02
- Tinetti, M. E., Williams, T. F., & Mayewski, R. (1986). Fall risk index for elderly patients based on number of chronic disabilities. *American Journal of Medicine, 80*, 429–434. [https://doi.org/10.1016/0002-9343\(86\)90717-5](https://doi.org/10.1016/0002-9343(86)90717-5)

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