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Mejeur, Jennifer and Grimmer, Joshua, "Efficacy of Interventions for Increasing Performance of Activities of Daily Living in Persons with Parkinson's and Lewy Body Disease" (2018). *Occupational Therapy Graduate Student Evidenced-Based Research Reviews*. 28. https://scholarworks.wmich.edu/ot_posters/28

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Efficacy of Interventions for Increasing Performance of Activities of Daily Living in Persons with Parkinson's and Lewy Body Disease

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Background: Dementia Lewy Body (DLB) and Parkinson's Disease (PD) are both chronic progressive neurodegenerative diseases that can affect functioning in occupational performance of activities of daily living. Lewy Body Dementia (LBD) is considered to include both diagnoses of DLB and PDD. There is limited research to support the efficacy of non-pharmacological interventions for these populations (Wand, 2007).



1Ask: Research Question

Which treatment approaches support increasing activities of daily living (ADL) performance in older adults with Parkinson's and Lewy Body Disease?

2aAcquire: Search Terms

Patient/Client Group: Older adults; Parkinson's; Lewy Body Dementia; Dementia Lewy Body

Intervention: therapeutic approach; Home therapy; individualized treatment; occupational therapy (OT)

Comparison: Persons with PD and DLB.

Outcome(s):ADL performance; Self-perceived independence

2bAcquire: Selected Articles

Morrin et al. (2018): A systematic review aimed at evaluating the efficacy of non-pharmacological treatment strategies for PD and LBD.

Sturkenboom et al. (2014): A Randomized control trial (RCT) examining the effectiveness of occupational therapy intervention strategies for increasing ADL performance compared to a **control** group for PD. Strategies include self-stimulating management, coaching, informing, and skills training.

Ciro, Hershey, & Garrison (2013):

This case study reported improvements in ADL performance through occupational therapy intervention.

3aAppraise: Study Quality

Morrin et al. (2018): Level I evidence; An effective intervention for both DLB and PD is **physical exercise** through the High-Intensity Functional Exercises (HIFE) Program – challenging leg strength, postural stability, and gait ability. Focuses on weight-bearing positions, e.g. squats and walking over obstacles.

Sturkenboom et al. (2014): Level II evidence. Highly relevant to functional, client-centered OT goals. Subjective self-report and outcome measures. Interventions included alternative and compensatory strategies such as use of cues, focused attention, and time-pressure management; simplification of activities, and education on aids and adaptations. Caregiver intervention included education of disease and resources.

Ciro, Hershey, & Garrison (2013): Level V evidence; Relevant to occupational performance. Provided detailed intervention approach called **Skill-building through Task-Oriented Motor Practice (STOMP)**, includes family-centered goals, task-specific, repetitive practice, errorless learning, and therapeutic relationship. Outcomes based on self-report and results of GAS goals. Limited external validity.

3bAppraise: Study Results

Morrin et al. (2018): The HIFE program provided improvements in mood, cognition, executive functions, and motor symptoms including sit-to-stand function, gait speed, and balance.

Sturkenboom et al. (2014): Therapeutic approach provided superior benefits compared to the control group in terms of ADL performance. Primary outcome measure was the COPM, which displayed significant changes from baseline to the end of treatment (1.2; 95% CI 0.8–1.6; $p < 0.0001$).

Ciro, Hershey, & Garrison (2013): Task-oriented training and the STOMP program increased participation in ADL tasks (sit-to-stand and donning eyeglasses). 2/3 ADL goals improved through OT intervention.

4Apply: Conclusions for Practice

Limited evidence: A shortage of evidence exists supporting the efficacy of OT interventions to increase ADL performance. Future studies must be done to determine if HIFE, STOMP, and other compensatory techniques are effective in improving ADL performance in persons with DLB and PD.

Interventions:

Evidence supports the use of task-oriented training (STOMP), exercise (HIFE), compensatory techniques, and general education of the diagnoses in improving ADL performance.

References:

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Morrin, H., Fang, T., Servant, D., Aarsland, D., & Rajkumar, A. (2018). Systematic review of the efficacy of non-pharmacological interventions in people with Lewy body dementia. *International Psychogeriatrics*, 30(3), 395-407. doi:10.1017/S1041610217002010

Sturkenboom, I., Graff, M. J. L., Hendriks, J. C. M., Veenhuizen, Y., Munneke, M., Bloem, B. R., & Nijhuis-van der Sanden, M. W. (2014). Efficacy of occupational therapy for patients with Parkinson's disease: A randomised control trial. *The Lancet Neurology*, 13(6), 557-566. [https://doi.org.libproxy.library.wmich.edu/10.1016/S1474-4422\(14\)70055-9](https://doi.org.libproxy.library.wmich.edu/10.1016/S1474-4422(14)70055-9)

Wand, A. (2007). Distinguishing dementia with Lewy bodies from dementia occurring in Parkinson's disease: A literature review. *Australasian Journal on Ageing*, 26(2), 58-63. <https://doi.org/10.1111/j.1741-6612.2007.00216.x>

Unclear. Limited evidence supports the use of non-pharmacological treatment for Parkinson's and Lewy Body Dementia. Interventions increasing ADL performance include exercise, repetitive tasks, and compensatory strategies.

