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What is the effectiveness of home-based physiotherapy for older persons in functional decline?

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Relevant Discipline	Physiotherapists, Clinical Exercise Physiologists, Occupational Therapists, Nurses, Medical Practitioners.
Sources searched	The searches occurred between August 24th and 28th 2020 in the following databases: Cochrane Library, Embase, Pubmed, Medline, PEDro and UpToDate. A search of ClinicalTrials.gov was also performed for unpublished evidence.
Quality appraisal of the body of Evidence	**Strength of Evidence:** The 5 studies from this review were a level II as per the NHMRC hierarchy.
	Quality of Evidence: The studies were of moderate quality, however, some were at risk of various sources of bias including: placebo, sampling bias and attrition bias.
	Statistical significance: The majority of the higher-level studies included found significant differences in their outcomes (p value <0.05). However only one study presented with an adequate sample size, the other 4 had smaller sample sizes which increases the risk of chance influencing the results.
	Clinical significance: The majority of studies have found clinical significance between the use of a home-based physiotherapy program as compared to the control group (usual care or against other interventions) in mobility and balance related function. Henceforth, the findings from such studies are likely to be transferable to application in the clinical setting.
	External Validity/Applicability: the studies included in this review are applicable to majority of countries with a developed economy. However, the wider elderly population may not be represented well due to exclusion of significant health conditions and living circumstances.
Summary of Evidence findings	Collectively the studies demonstrated a mixed effect of home-based physiotherapy to prevent functional decline in older adults. The most improved outcomes were seen in mobility but evidence for balance and activities of daily living was limited. The evidence infers that HBPP should incorporate both resistance and balance training and may also be supplemented by additional aerobic activity such as walking. Additional group trainings to supplement the programs were not deemed to provide any additional benefit providing the individual adhered to their home-based physiotherapy program. Follow up assessments in the studies indicated a return to baseline function following cessation of the exercise, suggesting that patients must continue with their programs to maintain functional improvement thus reducing decline.
Conclusions	Home-based exercise to reduce functional declines in mobility is supported by the evidence presented in this review. HBPP may be able to improve balance and ability in activities of daily living.
Implications for clinical practice	Clinicians should consider the use of HBPP for preventing deterioration in mobility seen in persons over the age of 65. However, evidence for the routine use of HBPP for improving balance and ADLs is lacking. Further high-quality research is needed to support the use of HBPP for these three components of functional decline. Such research may include investigation of the effect of Gerontechnology to enhance understanding of feasibility, benefits and adherence. It will also be useful for determining which intervention parameters are the most effective for preventing declines in mobility, balance and ADLs.

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2. Helbostad, J.L., Sletvold, O. & Moe-Nilssen, R. (2004). Effects of home exercises and group training on functional abilities in home-dwelling older persons with mobility and balance problems. A randomized study. *Aging Clinical and Experimental Research*, *16*(2), 113-121.
3. Fahlström, G., Kamwendo, K., Forsberg, J. & Bodin, L. (2018). Fall prevention by nursing assistants among community-living elderly people. A randomised controlled trial. *Scandinavian Journal of Caring Sciences*, *32*(2), 575-585.
4. Fairhall, N., Sherrington, C., Kurrle, S.E., Lord, S.R., Lockwood, K. & Cameron, I.D. (2012). Effect of a multifactorial interdisciplinary intervention on mobility-related disability in frail older people: Randomised controlled trial. *BMC Medicine*, 10, 120-120.
5. Martel, D., Lauzé, M., Agnoux, A., Fruteau de Laclos, L., Daoust, R., Émond, M., Sirois, M-J. & Aubertin-Leheudre, M. (2018). Comparing the effects of a home-based exercise program using a gerontechnology to a community-based group exercise program on functional capacities in older adults after a minor injury. *Experimental Gerontology*, *108*, 41-47.

This evidence summary has been prepared by undergraduate students as part of the HLTH 3057 Advanced Evidence Based Practice course. Due to limitations of assignment requirements reviews are limited to a maximum of 8 evidence sources. Conclusions and implications for clinical practice reported are provisional based on the evidence identified in this review and should be contextualized to local practice, clinical expertise and patient values. For further information on the review process please contact steve.milanese@unisa.edu.au