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Introduction: People living with dementia and MCI progressively lose abilities, through increasing cognitive impairment, co-morbidities, inactivity, acute illnesses injuries and risk aversion. Exercise-based rehabilitation may increase resilience, functional activity and reduce falls.

What is PrAISED? A dementia-specific therapy intervention, including tailored strength, balance and dual-task exercises, functional activity training and promoting community access, delivering up to 50 therapy sessions over 12 months, supervised by physiotherapists, OTs and support workers, underpinned by a behaviour change strategy.

Methods: A 5-site multi-centred RCT of the intervention compared with control. Participants were over 65, had a diagnosis of dementia or MCI, Montreal Cognitive Assessment (MoCA) 13-25, and a carer. Primary outcome after 12 months was the Disability Assessment in Dementia (DAD). Secondary outcomes were physical activity, quality of life, balance, functional mobility, cognition, mood and carer strain and falls. The COVID-19 pandemic necessitated modifications, including remote working.

Results:

- 365 participants. 58% male. Median age 80 years, MoCA 20/30.
- The intervention was very popular with participants.
- Median 31 (IQR 22-40) therapy sessions and 121 minutes/week of PrAISED activity.
- At follow-up, there was no difference between groups in DAD. Upper 95% confidence intervals excluded 'small to moderate' benefits on any outcome.
- DEMQoL and TUG were worse in the intervention group.
- Adjusted incidence rate ratio for falls was 0.78 (0.5 to 1.3); p= 0.3.
- There was a small excess of hospitalisations, deaths and care home placements in the intervention group.

Scale	Intervention	Control	Adj. mean difference	Effect size, p
ADL (DAD/100)	64.2	66.4	-1.3 (-5.2; +2.6)	-0.06, p=0.5
Activity (LAPAQ)	1037	1293	-167 (-445; 112)	-0.14, p=0.3
DEMQoL /112	83.7	89.2	-3.8 (-6.8; -0.8)	-0.26, p=0.01
DEMQoL-proxy/124	90.6	90.7	+2.4 (-0.3; +5.1)	+0.18, p=0.08
Berg Balance/56	46.3	46.7	+1.8 (-0.7; 1.1)	+0.15, p=0.2
Mobility (TUG/s)	16.6	14.0	-2.7 (-5.9; +0.5)	-0.29 p=0.1

Conclusion: The intensive PrAISED intervention did not improve measured outcomes. It may be impossible to reduce the rate of functional decline in dementia. Alternatively, the intervention may have been insufficiently intensive, the pandemic may have prevented proper implementation or participants may have been too advantaged to benefit. There may have been unmeasured psycho-social benefits. We must reconsider how we promote and measure wellbeing in dementia.