

Policy Brief: Exploring Factors related to Exercise in Adults with Mild Cognitive Impairment

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Context

The current increase in global ageing has led to rapidly ageing populations worldwide (Jagger et al, 2008). However, an increase in life expectancies has not led to an increase in healthy life expectancy. Global populations are experiencing an increased prevalence of disease in tandem with reductions in mobility functioning resulting in a lower level of good health than previous generations have experienced at the same age¹. With the need for better health among the ageing there is an imperative for research and health policy to focus on ageing well, making healthy ageing an important global priority. One way in which to help populations to live well in an ageing society is to prioritise research into furthering our understanding of methods of preventing and treating age-related neurodegenerative conditions such as Dementia, and using evidence based research to develop feasible and effective interventions.

Background

Dementia is a debilitating neurodegenerative condition characterized by deficits in memory, reasoning and thinking, and is commonly diagnosed when symptoms become severe enough to interfere with activities of daily living.

Mild Cognitive Impairment (MCI), a pre-clinical stage of Dementia, represents a phase between intact cognitive function and clinical dementia² that is characterised by cognitive deficits not severe enough to be classed as dementia but significant enough to pose potential barriers to performing Instrumental Activities of Daily Life. Not all individuals diagnosed with MCI progress to Dementia or Alzheimer's Disease (AD), however, age-related vulnerability can mean that the ageing brain is more susceptible to additional AD related changes³ and those diagnosed with MCI are more likely to progress to clinical dementia⁴.

MCI can indicate a long preclinical AD phase and an important target period for interventions aimed at the prevention of progression of cognitive decline. If interventions could delay the onset and progression of Dementia by one year, it is estimated that the decrease in incidence would result in 9.2 million fewer cases by 2050⁵.

Current Treatment?

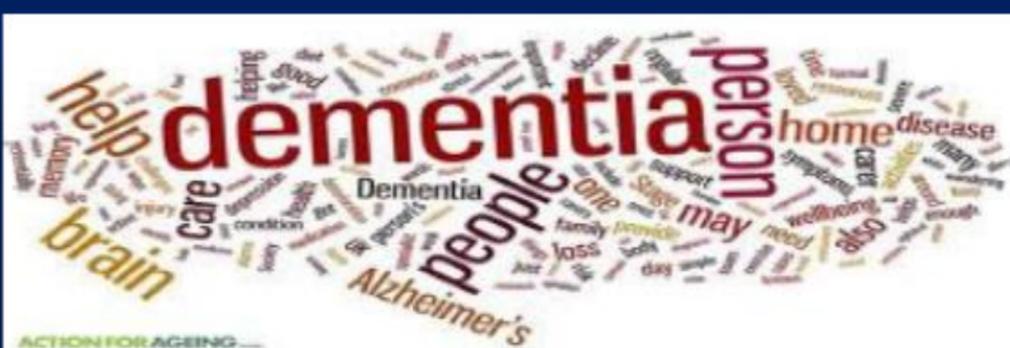
There are currently no treatments available which prevent or cure AD or slow the progression of MCI to AD, but one promising area of preventative research has been the **consistent positive relationship between exercise and healthy-ageing**. Research has shown that **exercise may have a protective effect on the brain and has demonstrated an inverse association between exercise and AD and dementia**⁶. It is reported that if the global population were to engage in regular physical activity, cases of dementia could be reduced by up to 300,000 cases each year⁷. This suggests that exercise interventions aimed at preventing or delaying the onset of cognitive decline are a viable non-therapeutic treatment option.

The Problem?

Less than half of Irish adults meet exercise guidelines and exercise levels have been shown to decline with age, meaning that the older we get, the less active we are. Adherence to structured exercise programs has also been found to be low in older adults. It is imperative for the success of these interventions that we as researchers understand the factors related to exercise participation and adherence to maximise the potential benefits of exercise interventions. However, research exploring the factors related to exercise participation and adherence has mainly **focused on healthy populations, excluding those with cognitive impairment**.

Aim

The aim of this study was to **address the lack of information** regarding the factors related to exercise participation in older adults with mild cognitive impairment (MCI), in order to **aid in the development of feasible exercise interventions** to prevent the progression of cognitive decline.



Methods

We conducted semi-structured interviews in 14 adults over 55 years with MCI. Grounded theory methods were used to explore the factors related to participation or non-participation in exercise, and how this was related to MCI. Participants described their attitudes and opinions toward exercise and the barriers and facilitators they encountered. Interviews were transcribed verbatim and analysed according to Constructivist Ground Theory principles, using constant comparison to theoretically code data and identify a theory of exercise in MCI.

Findings

The main barriers to exercise were lack of time for exercise and lack of knowledge regarding exercise benefits and recommendations. Facilitators to exercise were enjoyment of exercise and the social aspect of exercise. MCI did not emerge as a cited barrier to exercise for most participants except one, suggesting that exercise interventions may be feasible in general for this population, depending on the level of cognitive decline. Theoretical coding suggests that participation in exercise is a complex interaction, determined by how individuals "Prioritise" various barriers and facilitators to exercise based on the perceived benefit of exercise to them. If the individual perceives the benefit of exercise for them to be high based on their own attitudes and knowledge regarding exercise they are more likely to prioritise exercise above cited barriers to exercise, and are more likely to engage in exercise.

Policy Recommendations

Prescribing of exercise by healthcare professionals and increasing public awareness surrounding exercise and brain health are key areas to tackle in order to increase exercise participation and adherence in adults at risk of cognitive impairment.

Policy Options

- Design **exercise interventions** to maximise adherence to exercise for those suffering with MCI with a strong **educational component to increase awareness**.
- Encourage initiatives to **increase public awareness** of the benefits of exercise for brain health and how to meet exercise guidelines.
- Enable GP's and other Healthcare professionals to **promote exercise as a preventative measure for cognitive decline**.

Dissemination of information

- How?
- Public awareness!

Lack of knowledge

- Exercise guidelines
- Intensity
- Brain health link



Summary

MCI was not found to be a significant barrier to exercise, suggesting that exercise interventions for MCI populations are feasible. However, individuals were unaware of the amount of exercise they should be doing and of the potential benefit it may have for brain health. Barriers and facilitators are not the full picture. Participation in exercise is determined by how individuals prioritise exercise based on the interaction between barriers, facilitators and the perceived benefit of exercise to them.



See: ¹Crimmins EM, Beltrán-Sánchez H. Mortality and morbidity trends: is there compression of morbidity? *J Gerontol B Psychol Sci Soc Sci* 2011; 66: 75–86. ⁸Manton KG, Gu X, Lamb VL. Change in chronic disability.

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⁵Stephen, R., Hongisto, K., Solomon, A., & Lonroos, E. (2017). Physical Activity and Alzheimer's Disease: A Systematic Review. *J Gerontol A Biol Sci Med Sci*, 72(6), 733-739. doi:10.1093/gerona/glw251

⁶Sallis, J. F., Bull, F., Guthold, R., Heath, G. W., Inoue, S., Kelly, P., . . . Hallal, P. C. (2016). Progress in physical activity over the Olympic quadrennium. *Lancet*, 388(10051), 1325-1336. doi:10.1016/s0140-6736(16)30581-5

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