

Interpretive Qualitative Evaluation Motor Cognitive Integration, Exercise, and Movement Based Program – David Lazris - Emory School of Medicine, GA

David Lazris

Abstract

Background and Objectives: An estimated 10% to 20% of Americans aged 65 or older have mild cognitive impairment (MCI) with 10% progressing to Alzheimer's disease (AD) each year. Recently, literature has demonstrated that exercise and movement-based programs can improve cognitive function when compared to the general population. This work is from two focus groups of community members who suspected they have mild MCI with facilitated discussion to learn more about attitudes and beliefs towards motor-cognitive integration and exercise as well as a research project designed to study movement's interaction with cognitive impairment. **Methods:** We conducted two focus groups with a representative group of six and nine older adults who believed they had MCI. Participants were diverse with respect to race, socio-economic status, education level, sex, and marital status. **Results:** Findings from thematic analysis show most participants knew many of the benefits of exercise when it came to reducing medication, focus improvement, less mental health issues, and increased community building. Even with this knowledge, most participants were not getting adequate exercise due to many factors including pain, increased responsibilities, and safety fears. There was excitement for a program studying movements interaction with brain health as well as suggested improvements to the study. **Conclusion:** Results provide useful insights regarding improving participation among hard-to-reach and historically under-represented groups in clinical movement-based research. The perceived benefits and limitations to exercise can help explain the general populations perceptions on movement and its place in health. Physical activity (PA) participation provides functional and social benefits for persons with mild cognitive impairment (MCI) and Alzheimer's disease (AD), but PA participation in these populations is low. To support health promotion initiatives for cognitively impaired older adults, this study explored the perceptions, experiences, and beliefs of older adults with cognitive impairment and their caregivers concerning PA. Ten care dyads (community-dwelling adult aged ≥ 65 years diagnosed with MCI or mild-to-moderate AD and their care partner) participated in semi-structured interviews informed by the Theoretical Domains Framework about their PA perceptions, experiences, and beliefs. PA as a meaningful activity, experience versus evidence as motivating, participation is possible despite dementia, and care partners as enablers. Findings from this study address a research gap concerning the PA perceptions, experiences, and beliefs of cognitively impaired older adults and their care partners.

Novelty Older adults with MCI/AD want to and are capable of engaging in PA. Care partners are critical supporters of PA participation in MCI/AD. Adapted health promotion strategies could enhance PA in MCI/AD. **Objective:** We conducted this systematic review to support the U.S. Preventive Services Task Force (USPSTF) in updating its recommendation on screening for cognitive impairment in older adults. Our review addresses five questions: Does screening for cognitive impairment in community-dwelling older adults improve decisionmaking, patient, family/caregiver, or societal outcomes? What is the test performance of screening instruments to detect dementia or mild cognitive impairment (MCI) in community-dwelling older adult primary care patients?; What are the harms of screening for cognitive impairment?; Do interventions for early dementia or MCI in older adults improve decisionmaking, patient, family/caregiver, or societal outcomes? What are the harms of interventions for cognitive impairment? **Data Sources:** We reviewed 12 relevant existing systematic reviews; database searches through December 2012 in MEDLINE, PsycINFO, and the Cochrane Central Register of Controlled Trials; and additional searches for ongoing trials through ClinicalTrials.gov, World Health Organization International Clinical Trials Registry Platform, and Current Controlled Trials (ISRCTN Register). **Study Selection:** We conducted dual independent review of 16,179 abstracts and 1,190 articles against the specified inclusion criteria, including: screening instruments that could be delivered in primary care in 10 minutes or less by a clinician or self-administered in 20 minutes or less; diagnostic accuracy studies that used a reference standard; screening studies conducted in unselected community-dwelling older adults relevant to primary care in the United States; major pharmacologic and nonpharmacologic interventions in people with MCI or mild to moderate dementia; intervention trials of efficacy; or trials and large observational studies examining adverse effects. **Data Analysis:** We conducted dual independent critical appraisal of all included studies, and extracted all important study details and outcomes from fair- or good-quality studies. For diagnostic accuracy studies, we focused on sensitivity and specificity of instruments that were evaluated in more than one study. For treatment trials, we synthesized results by intervention type. We conducted a qualitative synthesis of results using summary tables and figures to capture key study characteristics, sources of clinical heterogeneity, and overall results of each study.

Ranjana Arya

School of Biotechnology, Jawaharlal Nehru University, New Delhi E-mail: arya.ranjana24@gmail.com

Quantitative synthesis was limited to test performance of the Mini Mental State Examination (MMSE) (due to insufficient number of homogeneous studies for other instruments) and U.S. Food and Drug Administration (FDA)-approved medications to treat AD and other medications and dietary supplements on global cognitive outcomes; caregiver interventions on caregiver burden and depression outcomes; and nonpharmacologic interventions aimed at the patient on global cognitive outcomes. Results: Screening: No trials examined the direct effect of screening for cognitive impairment on important patient outcomes, including patient, caregiver, and clinician decisionmaking outcomes. We identified 55 studies that addressed the diagnostic accuracy and harms of

brief screening instruments to detect cognitive impairment. Our ability to determine the magnitude and certainty of this benefit, however, is impeded by the limited number of trials and clinical (and statistical) heterogeneity, as well as the very wide confidence intervals (ranging from clinically not meaningful to a large effect). Harms were not reported in the included trials for caregiver or cognitive interventions. Exercise intervention trials (k=10; n=1,033) showed no consistent benefit on global cognitive outcomes or patient depression outcomes in people with MCI or mild to moderate dementia.

Bottom Note: *This work is partly presented at 27th Annual Summit on Neuroscience and Neurological Disorder at December 01-02, 2021 | Barcelona, Spain*