FC54: Effects of a mindfulness meditation intervention with neurofeedback on psychological well-being, cognition, and quality of life in older adults experiencing loneliness - a pilot randomized controlled study

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Objectives: Loneliness is a modifiable risk factor for depression and dementia in older age. Validated interventions are needed to mitigate the impact of loneliness in older adults. Some evidence suggests that mindfulness meditation may reduce stress, improve mood and cognitive function, and may also impact loneliness per se. Many meditation apps offer an accessible way to meditate at home. However, robust research is needed to assess the benefits of meditation using this technology for older adults. Muse is a meditation app that analyzes brain signals during meditation and provides users with real-time neurofeedback on their level offocus.

Methods: We conducted a pilot, randomized controlled trial to establish the acceptability and feasibility of a remote, mindfulness intervention using Muse in older adults, and to obtain preliminary data on its impact on mood and cognition. Twenty-six adults reporting feeling lonely were enrolled and randomized to an 8-week Muse-based meditation (MM) or a brain- training active control (BT) program. The MM group completed meditation sessions with real- time neurofeedback and guided meditation sessions using Muse. The BT group completed cognitively challenging games on the commercially available Peak app and listened to podcasts. The groups were matched on the amount of interactions with study staff and total program duration. Outcome measures included standardized self-report scales of loneliness, stress, depression, well-being, quality of life, sleep disturbance, resilience, and mindfulness. Staff blinded to program assignment administered cognitive tasks of episodic memory, working memory, and sustained attention, as well as a breath counting task. Assessments were taken at Pre, Mid, and Post intervention, and after a 2-month and 4-month (4M) follow-upperiod.

Results: Participants found both programs engaging and the remote assessments were feasible. The MM group showed a greater improvement in depressive symptoms, and psychological andphysical QOL, compared to the BT group, at Post and at 4M.

Conclusions: A Muse-based mindfulness program is an acceptable and accessible intervention for older adults. A large-scale randomized trial is warranted to evaluate the efficacy of this intervention in this group.

FC55: Geriatric abuse in India: Unveiling a hidden crisis

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Objectives: Geriatric abuse, a grave violation of human right affecting older adults, remains a silent epidemic in India. This study provides an insight into the prevalence, manifestation, contributing factors and societal implications of geriatric abuse within the Indian context. Drawing from scholarly research and empirical evidence it aims to illuminate the multifaceted nature of this phenomenon and advocate for urgent attention from policy makers, healthcare professional, and society at large Despite its pervasive nature, geriatric abuse in India often goes unnoticed and unaddressed due to cultural norms, family secrecy and systemic neglect. The abuse may take various forms including physical, psychological, financial and neglect perpetrated by family members, care givers or institutional staff. Factors such as socio- economic disparities, gender inequalities and cultural attitudes towards aging intersect to exacerbate the vulnerability of older adults to abuse. Understanding the socio cultural

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dynamics shaping geriatric abuse its essential for effective intervention and prevention strategies, traditional values emphasizing familial duty and respect for elders coexist with modern challenges such as urbanization, migration, and changing family structures impacting elder care and support networks furthermore, inadequate legal protections, limited access to healthcare, and stigma surrounding aging compound the challenges faced by older adults experiencing abuse. Addressing geriatric abuse in India requires a comprehensive approach encompassing legislative reforms community mobilization and capacity building initiatives strengthening reforms legal frame works to protect elder rights tailored to the needs of older adults and promoting awareness campaigns to challenge ageism and stigma are critical steps to creating a society where older adults age with dignity and safety.

Methods: We used interview and survey Methods to derive a representative sample (based on race gender education) in order to measure elder abuse in west Rajasthan (India) based population. Participants undergone interviewed via in OPD, IPD by taken case history, about a variety of abuse/mistreatment types and mistreatment risk factors in addition to question regarding health, social support and demographic. Specific elder abuse categories included emotional, physical, sexual, financial and neglect.

Results: Results of this study will be discussed during my presentation at the conference.

Conclusions: In consistent, geriatric abuse in India represents a profound violation of human rights and a moral imperative for action by acknowledging the complexities of this issue and fostering collaboration among stake holders, India can strive towards a future where older adults are respected, empowered and free from abuse and neglect.

FC56: Positive and negative social connections and brain health in the UK Biobank data

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Background: Social connections are important for brain health. We explored the associations between positive and negative social connections and the rate of decline in brain health with ageing.

Methods: We analysed UK Biobank data from 5704 adults aged 40+ (Wave 1 M_{age} = 54.12, 51.19% female) with brain scans at waves 2 and 3. Predictor variables were positive (current household size, visits to friends/family, community engagement, having a confidante) and negative (loneliness, violence in romantic relationships, or belittling in romantic relationships) social connections at baseline. Outcome variables were brain volumes (total grey & white matter, hippocampus, amygdala) and white matter health (DDF- white matter integrity, white matter hyperintensities, PSMD- a marker of microstructural white matter changes) at waves 2 and 3. We ran linear mixed models controlling for age, sex, intracranial volumes (for brain volume analyses), physical activity, depression, alcohol use, smoking, education, pollution, hearing loss, BMI and hypertension.

Results: Having a greater household size was associated with a slower rate of decline in volumes of total white matter (3160.08, 95% CI: 418.75, 5888.47), right amygdala (43.18, 95% CI: 14.70, 71.02), left hippocampus (62.96, 95% CI: 18.20, 108.04), and right hippocampus (61.02, 95% CI: 15.39, 108.36), and white matter integrity/DDF (0.0014, 95% CI: 0.00047, 0.0022). Loneliness was associated with a slower rate of decline in the left amygdala (81.48, 95% CI: 19.59, 145.91).

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