


## EDITORIAL

# Innovative approaches to improving mental health and well-being in older people

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Although mental ill health and its amelioration have been a subject of discussion for centuries in various fora, modern scientific approaches to mental well-being are more recent. The first randomized clinical trial in medicine was carried out by the British Medical Research Council (MRC) in 1948 (MRC, 1948). The first RCT in psychiatry addressed issues of depression and anxiety (Davies, 1955). Beck's RCTs involving cognitive behavioral therapy (CBT) for depression emerged in the 1960s, and once older adults became a focus for intervention, meta-analyses of psychotherapy and psychopharmacological interventions for these groups followed (*e.g.* Piquart *et al.*, 2006). These advances in mental health treatment took advantage of emergent methodological and statistical techniques to move the field forward.

This issue of *International Psychogeriatrics* includes three regular research reports on aspects of mental well-being in older persons that use contemporary methodological and statistical techniques in tune with modern challenges. Goodarzi *et al.* (2023) responded to the limitations of social distancing and telehealth during the early days of the COVID-19 pandemic by examining the efficacy of virtual interventions for reducing symptoms of depression in community-dwelling older adults. Their systematic review included RCTs comparing the efficacy of virtual interventions to any other virtual interventions or usual care administered to persons over 60 living in the community. The primary outcome of interest was measured objective change in depressive symptoms. Of 15 RCTs that met inclusion criteria, a third measured depressive symptoms at baseline and two-thirds examined depression as an outcome only. Interventions such as problem-solving therapy and CBT were included. Most studies demonstrated improvements in depression scores; many studies were hampered by small numbers of participants and small effect sizes.

Chong and Chiu (2023) rightly point out that while many advances have been made with respect to the use of internet mediums in the delivery of psychotherapy, and the increasing knowledge and comfort older adults have with such technologies,

“digital divides” remain. Globally, digital literacy and Internet access for older citizens tend to lag behind younger age groups. Social isolation may be exacerbated by a lack of access to digital communication media; this may be exacerbated in those in poorer health or facing economic constraints.

Using a different sort of technology with an RCT methodology, Kumar *et al.* (2023) piloted a trial of repetitive Paired Associates Stimulation (rPAS). This paradigm combines transcranial magnetic stimulation (TMS) of the dorsolateral prefrontal cortex (DLPFC) with peripheral median nerve stimulation. The object of this pilot was to examine the impact of rPAS on DLPFC plasticity and working memory performance in 32 people living with Alzheimer's dementia randomized to active or control rPAS conditions. DLPFC plasticity was assessed using single-session PAS combined with electroencephalography (EEG); working memory was assessed using the N-back task. While no significant differences between the active and control rPAS groups on DLPFC plasticity or working memory performance emerged, *post hoc* analyses suggested several potential promising lines of further inquiry. Advantages of using TMS in older populations include minimal adverse effects, no harmful effects on cognition, and the absence of any drug interactions, and its success in treating cognitive and behavioral aspects of dementia make continued explorations of the methodology, as in the paper by Kumar *et al.* (2023), warranted (Tampi, 2023).

Ayalon and colleagues have researched various aspects of ageism, including a review of the psychometric properties of various ageism scales (Ayalon *et al.*, 2019), which have advanced the field. In this issue, Ayalon *et al.* (2023) report on an innovative methodology, the use of virtual embodiment (VE), to reduce self- and other-directed ageism. Virtual embodiment involves visually substituting a person's real body in a virtual reality (VR) environment with a virtual one (an avatar), seen from the person's own first-person perspective. Participants between the ages of 18 and 35 ( $N = 80$ ) were randomized to either a VE of an older avatar or a younger avatar. No differences were found on explicit measures of

self- or other-directed ageism. On the Brief-Implicit Association Test (BIAT), a measure of implicit bias, participants who interacted with the older avatar showed a reduced negative bias towards older people compared to those who interacted with a younger avatar. Unfortunately, the BIAT was only administered to 41 participants and the measure did not meet the Bonferroni correction cutoff (.01). Thus, despite a large effect size of .75 the intervention was non-significant once multiple comparisons were considered and the cutoff for statistical significance was adjusted for. The authors suggest that future studies which elaborate on this relatively simple avatar-based intervention, such as tasks which include other people and their reactions to the avatar, might produce different effects.

Scott (2023) points to the urgency of tackling ageism since its increased salience across societies especially in the wake of the COVID-19 pandemic. Ageism's negative effects on health and well-being have been amply demonstrated (e.g. Levy *et al.*, 2020). The VR field might benefit from advances in 3D technology where creating more photo-realistic human characteristics could mean that participants would see their "older selves" reflected at them, which might in turn boost the power of Ayalon's VE intervention in a future application (Scott, 2023).

The articles in this issue highlight several overlapping issues. First, new technologies, methodologies, and applications of innovative interventions continue to move the field of psychogeriatrics and particularly intervention strategies forward. Some of the impetus for these interventions have sprung from the COVID-19 pandemic, either in response to the constraints of social isolation or to the increasing salience of ageism in the wake of the crisis. Others have emerged from a desire for more inclusive, or less invasive, treatment options. Finally, while some of the studies here reported negative or modest effects, clear signposting of future directions will allow researchers the opportunity to continue to explore innovative approaches to bolster mental health and well-being in older people.

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