

Os textos são da exclusiva responsabilidade dos autores
All texts are of the exclusive responsibility of the authors

EFFECT OF MINDFULNESS ON EEG BRAIN ACTIVITY FOR COGNITIVE AND PSYCHOLOGICAL WELL-BEING IN THE ELDERLY: PRELIMINARY DATA.

Samantha Galluzzi¹, Mariangela Lanfredi², Giovanni Draisci³, Cristina Festari¹, Sara Gipponi¹, Serena Meloni², Roberta Rossi², Evita Tomasoni¹, Alberto Chiesa^{4,5}, Davide V. Moretti^{3,6}

¹Lab Alzheimer's Neuroimaging & Epidemiology, ²Unit of Psychiatry, ³Clinical Neurophysiology Service and ⁶Alzheimer's Rehabilitation Unit, IRCCS Istituto Centro San Giovanni di Dio Fatebenefratelli, Brescia, Italy; ⁴Istituto Mente e Corpo, Bologna, Italy; ⁵Associazione di Psicologia Cognitiva - Scuola di Psicoterapia Cognitiva, Roma, Italy.

Grant 104/18

Background: As the worldwide population of older adults rapidly increases over the coming years, effective strategies are needed to maintain cognitive and psychological well-being. Mindfulness training (MT) was found to be efficacious both for enhancing cognition and emotion regulation.

Aims: Aim of the study is to evaluate cognitive, psychological, and electrophysiological effects of a standard 8-week MT in healthy older adults.

Method: Seventy older adults took part in a standardized MT program consisting of 2-hour group sessions that were delivered at weekly intervals for 8 weeks. A comprehensive cognitive (verbal memory, attention and executive functions) and psychological (anxious and depressive symptoms, dispositional mindfulness, worries, emotion regulation strategies, wellbeing, interoceptive awareness, sleep) evaluation and EEG recording were collected at pre- and post-MT and at 6-month follow-up. Data were analyzed using an intention-to-treat approach by a linear mixed model. Estimated mean and standard error were reported, with age, gender and education as covariates.

Preliminary results: For the first 20 subjects MT took place in-person, but 10 withdrew due to interruption of MT sessions during the COVID-19 lockdown. For the remaining 50 subjects MT took place via a live internet-based videoconference, due to COVID-19 restrictions. Eight of them (16%) withdrew due to personal or medical problems. Only one subject was lost at 6-month follow-up. In the whole group of 70 participants, we found significant improvement between pre- and post-MT on California Verbal Learning Test, immediate recall (50.3 ± 1.2 vs 54.4 ± 1.3 , $p = .04$), short and long delayed cued recall ($11.4 \pm .3$ vs $12.7 \pm .3$, $p = .004$, and $11.5 \pm .3$ vs $12.6 \pm .3$, $p = .046$, respectively) and on Multidimensional Assessment of Interoceptive Awareness, self-regulation ($2.4 \pm .1$ vs $3.1 \pm .1$, $p < .0005$). These improvements remained significant at 6-month follow-up ($p < .01$ for all scales). All these results were still significant when considering only the 50 participants in internet MT. In a subgroup of 20 participants, EEG alpha1 and alpha3 frequencies increased from pre- to post-MT ($p < .05$), suggesting that increases in alpha power can be associated with MT relative to a resting state.

Conclusions: Our preliminary results suggested that MT could be associated with positive cognitive and psychological effects and electrophysiological correlates in healthy older adults, even when delivered in an internet-based format.

Keywords: Mindfulness, Older adults, EEG, Cognition, Psychological

E-mail contact: sgalluzzi@fatebenefratelli.eu