

## OS15.03

**Transcendental Meditation for the improvement of health and wellbeing in community-dwelling dementia caregivers [TRANSCENDENT]**

Matthew Leach<sup>1</sup>, Andrew Francis<sup>2</sup>, Tahereh Ziaian<sup>1</sup>

<sup>1</sup> University of South Australia

<sup>2</sup> RMIT University

**Purpose:** Dementia is a prevalent neurodegenerative disorder affecting an estimated 24.3 million people across the globe. The burden on those caring for people with dementia is substantial, with widespread implications for the carer, the care recipient and the community. Relaxation techniques, such as Transcendental Meditation® (TM), have been shown to reduce stress and anxiety in healthy workers; similar benefits are anticipated in dementia caregivers. The objective of this research is to ascertain whether TM can improve psychological stress, quality of life, affect and cognitive performance in dementia caregivers.

**Methods:** The study was conducted as a pilot prospective, multi-centre, community-based, randomised wait-list controlled trial. Community-dwelling carers of persons with diagnosed dementia were randomly assigned to a twelve-week (fourteen-hour) TM training program or wait-list control. Participants were assessed for quality of life, stress, affect, cognitive performance and adverse effects. The feasibility of the study was also evaluated.

**Results:** Seventeen caregivers were recruited and randomised. Improvements in WebNeuro response speed scores over time were significantly greater in the TM group relative to control. Changes between groups in all other primary and secondary outcome measures did not reach statistical significance. However, there was a trend toward greater improvement in WebNeuro stress, depression and negativity bias scores in the TM group. Adverse events were reported amongst 63% of TM-treated subjects.

**Conclusion:** Dementia caregivers demonstrated improvements in some measures of cognitive function following exposure to TM. However, as the pilot study was underpowered, no firm conclusions can be made about the effectiveness of TM on carer quality of life and cognitive function. Findings from full-scale trials are now warranted.

**Contact:** Matthew Leach, [matthew.leach@unisa.edu.au](mailto:matthew.leach@unisa.edu.au)

<http://dx.doi.org/10.1016/j.imr.2015.04.363>



## OS15.04

**Brain Correlates to Facial Motor Imagery as a Component of Qigong Practice in Bell's Palsy**

Ramy Sayed<sup>1</sup>, Seulgi Eun<sup>1</sup>, Abdalla Z. Mohamed<sup>1</sup>, Jeungchan Lee<sup>2</sup>, Eunyoung Lee<sup>3</sup>, Seung Min Lee<sup>4</sup>, Hwa-Jin Lee<sup>4</sup>, Sanghoon Lee<sup>4</sup>, Woooseok Choi<sup>5</sup>, Kyungmo Park<sup>1</sup>

<sup>1</sup> Department of Biomedical Engineering, Kyung Hee University

<sup>2</sup> Massachusetts General Hospital

<sup>3</sup> Korea Institute of Oriental Medicine, Daejeon

<sup>4</sup> Department of Acupuncture and Moxibustion, School of Oriental Medicine, Kyung Hee University, Seoul

<sup>5</sup> Department of Radiology, Kyung Hee University, Seoul

**Purpose:** Qigong has been known to help in Bell's palsy (BP) rehabilitation and also it contains a technique very similar to motor imagery for enhanced body awareness. According to previous studies, facial movement may lead to increased activity in attention and sensory-motor areas in order to improve the facial motor performance in BP. So we tested the effect of motor imagery for BP rehabilitation and investigated brain areas that correlates to facial motor imagery.

**Methods:** fMRI was applied to two groups (34 normal, and 14 BP subjects). The paradigm consisted of mouth and forehead motor imagery with 2seconds animation movie and inter-stimulus interval of  $9.81 \pm 1.6$  seconds. General linear model and unpaired T-test were done and for the BP group we flipped the individual maps for those who had right side BP, so that the right hemisphere represents paretic side. Also correlation analysis was used to correlate brain activity with a facial motor imagery index.

**Results:** Interestingly, mouth motor imagery in both normal and BP subjects showed activation in MI, SI, superior temporal sulcus, superior temporal gyrus, and supplementary motor area which are main sensory-motor areas shown in motor tasks. Additionally, mouth motor imagery in BP induced greater activity in contralateral sensory-motor areas (MI, SI, premotor cortex, and SII) compared to normal subjects. Also facial motor imagery index was positively correlated with contralateral posterior insula in BP.

**Conclusion:** Facial motor imagery shares similar activation in sensory-motor areas with facial motor tasks, and BP facial motor imagery has greater activity in contralateral sensory-motor areas than normal subjects. Additionally, higher facial motor imagery performance induces more activation in inter-ceptive sensory processing areas. So it could be speculated that facial motor imagery could be helpful in BP rehabilitation in same way with motor task.

**Contact:** Kyungmo Park, [saenim@khu.ac.kr](mailto:saenim@khu.ac.kr)

<http://dx.doi.org/10.1016/j.imr.2015.04.365>

