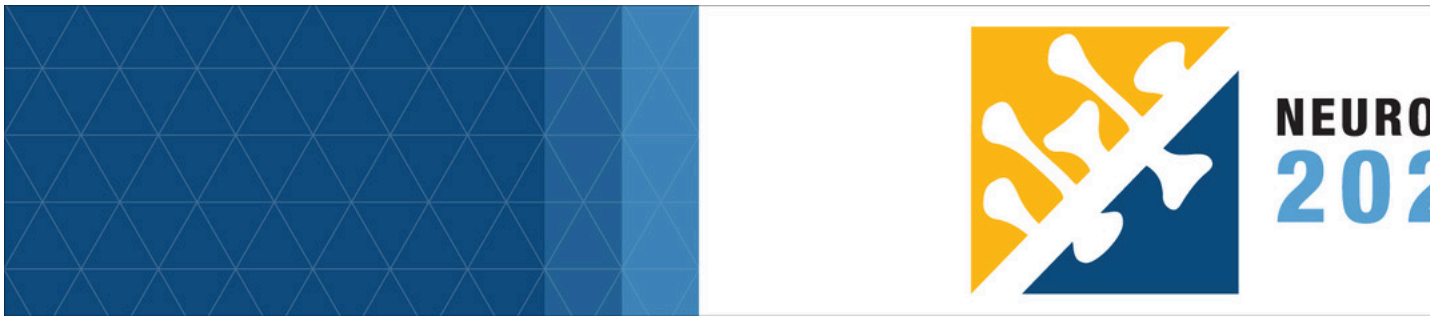

Print this Page for Your Records Close Window

Control/Tracking Number: 2025-S-14586-SfN
Activity: Scientific Abstract
Current Date/Time: 6/6/2025 11:29:38 AM

Quantifying improvements in cognitive skills, stress, and mindfulness from mantra-based and breath-focus meditation techniques

AUTHOR BLOCK: ***A. SYED**[1], A. LI[2], K. IKA[3], B. COHEN[4], M. ZHANG[2], S. RAVISHANKAR[1];
[2]Computat. Mathematics, Sci. and Engin., [1]Michigan State Univ., East Lansing, MI; [3]BrainWave Sci., Southborough, MA; [4]New York Univ., Greenwich, CT

Configuration: AbstractBodyLabel not found. Please contact Dev Support Abstract:
With rising mental health issues in young adults, contemplative meditation practices have been gaining more attention due to their perceived effects on stress, attention, and concentration. The current study analyzes the psychological and neurophysiological impacts of three meditation techniques over a period of six weeks of training and practice: Breath-Focus (BF) meditation and Japa (mantra-based) meditation with one of two mantras: Hare Krishna (HK) or SA-TA-NA-MA (SA). The effects are analyzed against a no-meditation (NM) control group. Data on 65 healthy college students was recorded before and after the meditation intervention.Attention-related brain responses were monitored via event-related potentials (ERP) during a classical visual oddball task. Psychological outcomes were evaluated via standard self-report questionnaires: the Perceived Stress Scale (PSS), Five Facet Mindfulness Questionnaire (FFMQ), and the revised Multidimensional Assessment of Interoceptive Awareness (MAIA-2). The Wilcoxon test was used for all before-after differences, with the significance level set at .05. Prior research has shown that shorter ERP latencies are associated with increased levels of attention. The latency difference between pre- and post-meditation training showed a mean change (in ms) of -19.96, -16.5, -6.2, and 1.27 for the BF, SA, HK, and NM groups, with p values of .064, .025, .295, and >.5, respectively, suggesting improved focus in all meditating groups but not in the control group with significance reached only in SA. All meditation groups showed reduced stress (PSS) but not the NM group; only the BF group's decrease was significant. With respect to the FFMQ, the BF group showed a significant gain in Acting with Awareness; HK improved on all subscales, but not significantly. Interoceptive awareness (MAIA-2) improved across all subscales for all meditation groups. In particular, improvements in the attention regulation, self-regulation, emotional awareness, and trusting subscales were significant for (SA), (BF, SA), (HK, BF), and the (HK, BF) groups, respectively. However, the NM group did not show significant improvement in any of the subscales. Our data suggests that even short, daily meditation sessions can yield measurable changes in underlying brain activity and mental well-being. SA meditation excelled at bolstering attention-related neural activity, while the HK and BF groups showed enhanced emotional body awareness. These results add to the emerging literature suggesting that contemplative methods can be used as low-cost and easy to implement interventions to improve mental and emotional well-being among young adults.

Author Disclosure Information:

A. Syed: None. **A. Li:** None. **K. Ika:** C. Other Research Support (receipt of drugs, supplies, equipment or other in-kind support); Research funded by Brainwave Science, Inc., whose EEG headset and ERP software were used within the study.. **B. Cohen:** None. **M. Zhang:** None. **S. Ravishankar:** None.
Presentation Preference (Complete): Poster Only
Linking Group Selection (Complete): StrawberryBanana
Theme and Topic (Complete): I.01.a. Mechanisms of attention - Human studies ; H.04.d. Emotion - Positive and negative emotional states
Linking Group and Nano Info (Complete):
Keyword (Complete): EEG ; Attention ; Stress
Support (Complete):
Support: No

Special Requests (Complete):
* **How do you plan to participate in Neuroscience 2025?**: In-Person Only
* **At this time, is your author block complete?**
Note that you will have a chance to edit your author block through the editing deadline and again in August.: No
* **Religious or Other Conflict**: No Conflict
* **Is the submitting author of this abstract also a senior author?**: No
* **Is the presenting author of this abstract a high school or undergraduate student?**: None
* **Select**: Human

Status: Finalized

 Stay Connected

cOASIS Technical Support | Monday - Friday, 9 am - 5 pm CT | Phone: 1-217-398-1792 | Email: cOASIS Helpdesk

Feedback