

Meditation Aided with 40 Hz Binaural Beats Enhances the Cognitive Function and Mood State

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Abstract : The exposure of constant stress stimuli in our daily lives is causing deterioration of neural connectivity in the brain. Interestingly, the improvement in larger-scale neural communication has been argued to rely on brain rhythms, which might be sensitive to binaural beats of particular frequency bands. The theoretical idea behind neural entrainment is that the rhythmic oscillatory activity within and between different brain regions can enhance cognitive function and mood state. So, we aimed to investigate whether the binaural beats of 40 Hz could enhance the cognition and the mood stability of the medical students at Kathmandu University of age 18-25 years old, which possibly, in the long run, might help to enhance their work productivity. The participants were asked to focus on the auditory stimuli of binaural beats with 200 Hz on the right side and 240 Hz on the left side of the headset for 15 minutes, every alternative day of three consecutive weeks. The Stroop's test and the Brunel Mood Scale (BRUMS) were applied to assess the cognitive function and the mood state, respectively. The binaural beats significantly decreased the reaction time for the incoherent component of Stroop's test in both male and female participants. For the mood state, scores of all positive emotions except 'Calmness' were significantly increased in the case of males. Whereas, scores of all positive emotions except 'Vigor' were significantly increased in the case of females. The results suggested that the meditation aided by binaural beats of 40 Hz helps in improving cognition and mood states to some extent.

Keywords : binaural beats, cognitive function, gamma neural oscillation, mood states

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