Transcendental Meditation Buffers Students Against College Stress (Video)

February 24 2009

Dr. Travis points out periods of global alpha coherence recorded during Patricia's meditation session. © Maharishi University of Management

Transcendental Meditation may be an effective non-medicinal tool for students to buffer themselves against the intense stresses of college life, according to a new study to be published in the February 24 issue of the peer-reviewed International Journal of Psychophysiology.

"Effects of Transcendental Meditation practice on brain functioning and stress reactivity in college students" is the first random assignment study of the effects of meditation practice on brain and physiological functioning in college students.

The study was a collaboration between the American University Department of Psychology in Washington, D.C., and the Center for

Brain, Consciousness, and Cognition at Maharishi University of Management in Fairfield, Iowa.

The study investigated the effects of 10-weeks of Transcendental Meditation (TM) practice on "Brain Integration Scale" scores (broadband frontal coherence, power ratios, and preparatory brain responses), electrodermal habituation to a stressful stimulus, and sleepiness in 50 students from American University and other Washington, D.C., area universities.

Physiological and psychological variables were measured at pretest; students were then randomly assigned to a TM or control group. Posttest was 10 weeks later—just before final exam week. At posttest, the meditating students had higher Brain Integration Scale scores, less sleepiness, and faster habituation to a loud tone—they were less jumpy and irritable.

"The pressures of college can be overwhelming—44% of college students binge drink, 37% report use of illegal drugs, 19% report clinical depression, and 13% report high levels of anxiety," said Fred Travis, lead author and director of the MUM brain research center.

Travis said the data from the non-meditating control group showed the detrimental effects of college life on the students. "The control group had lower Brain Integration Scale scores, indicating their brain functioning was more fragmented—which can lead to more scattered and disorganized thinking and planning. The controls also showed an increase in sympathetic reactivity and sleepiness, which can correspond to greater anxiety, worry and irritability" he said.

In contrast, Transcendental Meditation practice appeared to buffer the effects of high stress.

"From pretest to posttest, Brain Integration Scale scores increased significantly, indicating greater breadth of planning, thinking, and perception of the environment. The sympathetic reactivity and sleepiness decreased among the TM group, which corresponds to greater emotional balance and wakefulness.

"These statistically significant results among college students suggest that the practice of the Transcendental Meditation technique could be of substantial value for anyone facing an intense and challenging learning/working environment." Travis said.

Patricia Spurio, one of the students in the TM control group, was carrying a full credit load, had a part-time internship, and helped organize a large rally on campus. "For me the greatest benefit was being able to have these two 20-minute periods of meditation. I could feel my whole body releasing the stress of the day. When done, I felt rested and ready for more activity. TM helped me get through it all in a more healthy and balanced way."

ABOUT THE STUDY

1. Higher Brain Integration Scale includes three brain measures:

• Frontal coherence, a measure of coordinated functioning of executive brain areas;
• Higher alpha and lower gamma EEG, a change in processing style from attention to outer boundaries (gamma EEG) to attention to one's inner state of well-being (alpha EEG);
• More appropriate cortical preparatory response, a measure of efficiency of applying mental and motor resources to the task.

2. Faster habituation to a loud tone as measured by skin conductance response:

The sympathetic nervous system responds to loud new tones. However, when you hear the noise again, you do not have to respond to it again. The person who is more balanced habituates—stops responding—very quickly. The person who is more anxious and worried will continue to respond to the tone. This is what was seen in the non-meditating students.

3. Less sleepiness:

The posttest was at the end of the semester—one week before Finals Week—the time of greatest pressure and stress for a student. Those students who practiced TM and regularly experienced the state of restful alertness during the practice were more awake. They reported less chance of dozing in eight common situations, on a standardized sleepiness scale.

4. Implications of higher scores on the Brain Integration Scale

Higher scores mean greater frontal coherence, more alpha activity, and better match of brain activation and task demands. Higher scores indicate more optimal brain functioning to support more successful action. High scores on the Brain Integration Scale are correlated with:

- higher emotional stability,
- higher moral reasoning,
- more openness to experience, and
- decreased anxiety.

Preliminary research indicates that professional athletes (Norwegian), who won gold in World games and Olympic games, had higher Brain Integration scores. Top-level managers also have higher Brain Integration scores. Thus increasing one's Brain Integration Scale scores can provide a new basis for success, a new foundation to deal with the challenges we face in an ever-accelerating world.

Source: Maharishi University of Management