Effect of Brainwave Entrainment and frequency-therapy technology for EMF effect mitigation on the quality of sleep, mood, and heart rate variability: pilot study with healthy individuals.

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OBJECTIVE

Evaluate the Effect of Audio Brainwave Entrainment (ABE) and EMF effects mitigation technology (EEMT), either alone or combined on quality of sleep and mood.

METHODS

Sample size consisted of 20 volunteers who were not making use of analgesics, anti-inflammatories or sleep aids at least seven (7) days prior to, as well as during the study, and who had no hearing disabilities. The study was conducted over the course of six (6) weeks. Participants were asked to undergo two (2) Braintap sessions a day (Braintap Headset, New Bern - NC - USA) and be in close proximity to a Somavedic™ EMF effects mitigation technology during the day and particularly DURING SLEEP for the duration of the study (6 weeks). The assessments consisted of the following online questionnaires: Pittsburgh Quality of Sleep Index, The Profile of Mood States (POMS) questionnaire, and The Depression, Anxiety and Stress Scale (DASS-21).

CONCLUSIONS

Overall results indicate positive effects of Audio Brainwave Entrainment and EMF effects mitigation technology on quality of sleep, stress, depression and mood.

RESULTS

- Statistically significant decrease in stress and depression scores ($p<0.05$), and decrease in anxiety, but not statistically significant ($p=0.0003$) (Figure 1),
- Statistically significant increase in Mood ($p<0.05$) (Figure 2).
- Statistically significant increase in Quality of Sleep (PQSI total score, $p<0.05$), as well as on sub scales II (sleep latency), III (sleep duration), V (sleep disturbance), and VII (daytime dysfunction); positive results in sub scales I (subjective sleep quality) and IV (sleep efficiency), although not statistically significant ($p=0.1981$ and $p=0.3122$, respectively); finally, on Subscale VI (use of sleep medication), one participant started making use of sleep aids, negatively affecting results ($p=0.6811$) (Figure 3).

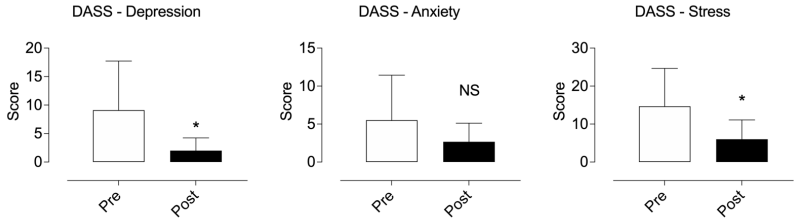


Figure 1. Depression, Anxiety and Stress Scale (DASS-21). Lower scores indicate improvement. NS: Not statistically significant. *p<0.05 when compared to baseline evaluation. Paired t-test analysis (prism graphpad 9, La Jola USA).

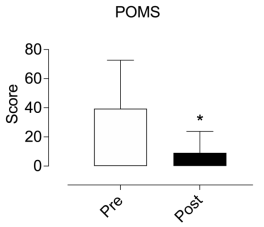
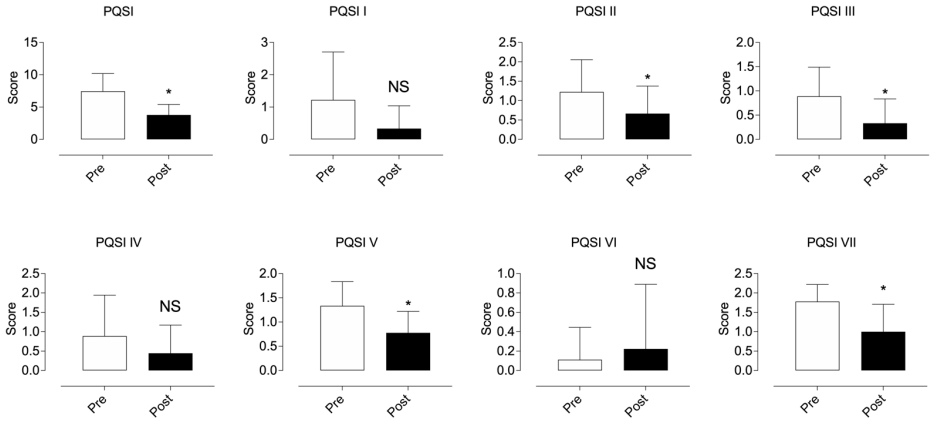


Figure 2. Profile of Mood States (POMS). Lower scores indicate less disturbances to mood. *p<0.05 when compared to baseline evaluation. Paired t-test analysis (prism graphpad 9, La Jola USA).



BRAINTAP Brainwave Entrainment Headset and App

SOMAVEDIC EMF Effects Mitigation Device

Figure 3. Pittsburgh Quality of Sleep Index (PQSI). Lower scores indicate less disturbances to sleep, hence better quality of sleep. Global PSQI Score (PQSI); PQSI I: Subjective sleep quality; PQSI II: Sleep latency; PQSI III: Sleep duration; PQSI IV: Sleep efficiency; PQSI V: Sleep disturbance; PQSI VI: Use of sleep medication; PQSI VII: Daytime dysfunction. NS: Not statistically significant. *p<0.05 when compared to baseline evaluation. Paired t-test analysis (prism graphpad 9, La Jola USA).