

X ISNIM CONGRESS & III SIPNEI CONGRESS

PSYCHONEUROENDOCRINOIMMUNOLOGY-BASED MEDITATION (PNEIMED) TRAINING REDUCES STRESS SCORES AND SALIVARY CORTISOL UNDER BASAL AND STRESSFUL CONDITIONS IN HEALTHY UNIVERSITY STUDENTS: RESULTS OF A RANDOMIZED CONTROLLED STUDY

Anna Giulia Bottaccioli^{1,2}, MD

1 Resident in Internal Medicine Department, Sapienza University, Rome, Italy

2 SIPNEI member

AIM: Meditation, as well as other Mind-Body techniques, represent an effective and safe practice lowering distress and promoting well-being. Psychological factors like depression and chronic stress are now included as independent risk factors for developing cardiovascular disease at the same level with classic risk factors (hypertension, dyslipidaemia, diabetes mellitus, physical inactivity and cigarette smoking). Previous published case-control study demonstrated that four-day PNEIMED training (30 hours in total) was able to reduce distress symptoms and cortisol secretion under basal and stimulated conditions among middle-aged healthcare workers. In this work, we have applied the same method to a younger randomized population.

METHODS: A randomized controlled study was conducted. Participants (n=40, mean age 25 yrs), healthy university students of Faculty of Psychology with no previous experience of meditation, were randomly assigned to intervention group (n=20), and to control group (n=20). At the beginning (T0) and at the end (Tf) of PNEIMED course, subjective stress score was measured with Symptom Rating Test (SRT) and Perceived Stress Scale (PSS) questionnaires. Assessment of attention-control cognitive functions was made through a battery of neuropsychological tests (Stroop, Posner, Continuous and 2nd Back tasks). Salivary cortisol was measured at T0 and Tf upon awakening (basal condition), 5 minutes before and 10 and 30 minutes after a challenging mental task (Subtraction Stress Task). Evaluation of anxiety pre and post stress-elicitation task was measured with State-Trait Anxiety Inventory (STAI) at T0 and Tf of PNEIMED course.

RESULTS: psychological distress at the end of PNEIMED training was reduced, showing significantly lower scores both in SRT ($F_{1,38} = 7.46$, $p = 0.009$) and PSS ($F_{1,38} = 4.68$, $p = 0.03$) psychometric tests. In PNEIMED group, some students attention-control functions were enhanced at Tf (Stroop numeric test: $F_{1,38} = 6.24$, $p = 0.01$), but didn't globally reach the significance. In PNEIMED-attending subjects, basal morning cortisol concentration markedly reduced after the training, while acute cortisol response to cognitive challenge didn't show significant variation between two groups. At Tf, STAI score of anxiety pre and post stress-elicitation task was significantly reduced ($F_{1,38} = 17.7$, $p = 0.0001$ and $F_{1,38} = 3.64$, $p = 0.06$ respectively) in intervention group compared to control group.

CONCLUSION: present findings show that a brief PNEIMED training yields immediate benefits also in a healthy young students group, since it reduces self-rated symptoms of anxiety, depression and distress under basal and stressful conditions, accompanied by an improvement of adrenocortical activity through a reduction of morning cortisol secretion. PNEIMED method could represent a safe and useful tool to reduce preventable cardiovascular risks and obtain better health outcomes in general population.