

## ABSTRACT

### IMMEDIATE EFFECT OF *PRANAYAMA* ON STATE ANXIETY AND COGNITION IN PATIENTS SUFFERING FROM CHRONIC NEUROLOGICAL DISORDERS

**Background:** Cognitive impairments and psychological problems has been recognized as an important feature of chronic neurological disorders. Present study shows the immediate changes after two selected pranayama practice on anxiety and cognitive functions in patients suffering from chronic neurological disorders.

**Methods and Material:** A self-as-control study was conducted in a neuro-rehabilitation center located in Germany. Thirty-Six patients (16 males & 20 females) in the age range of 20 – 80 years ( $59.25 \pm 16.68$  years), diagnosed by neurologist to be suffering from neurological disorders from 1 to 42 ( $13.97 \pm 12.15$ ) years were recruited for the study. Each patient was assessed before and immediately after a single session of pranayama practice and breath awareness for 10 minutes sessions on two consecutive days in similar settings. Assessments included standardized psychometric tests: Six letters cancellation task, Digit backward and forward test and Spiel Berger's State-Trait Anxiety Inventory (STAI: Y-6 item) for attention, psychomotor performance, information processing speed, executive functions and memory as well as psychological state. Data was analysed using repeated two-way repeated measures analysis of variance with Bonferroni corrections.

**Results:** Study results showed significant improvement in SLCT ( $29.64 \pm 10.64$ ) compared to breath awareness ( $27.64 \pm 9.18$ )  $p = 0.007$ . Within group analysis showed that, there was a statistically significant change in SLCT  $p = 0.001$ . Other variables state anxiety (SA)  $p = 0.397$ , Digit forward (DF)  $p = 0.245$ , digit backward (DB)  $p = 0.168$  showed no significant change.

**Conclusion:** The present study was conducted with an objective to understand the immediate effect of two selected yogic breathing practices: *nadi shuddhi* pranayama and *bhramari* pranayama and versus breath awareness on state anxiety and cognitive functions including

attention, working memory and psychomotor ability in patients with multiple chronic neurological illnesses. The interventions were administered as adjunct treatments along with conventional allopathic and physiotherapeutic regimens in patients in an inhouse treatment setup in Germany. The results from our study show that immediately following the pranayama sessions, working memory, selective attention and psychomotor ability improved significantly as compared to the breath awareness session. These beneficial effects are speculated to be contributed by vagal predominance following yogic breathing practices.

**Key words:** Pranayama, Cognition, Chronic neurological disorder, State anxiety.