

Yoga and aerobic exercise in early psychosis: Neurocognitive effects and brain changes of a novel clinical strategy

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OBJECTIVE: The current study aims to explore the effects of aerobic exercise and mind-body exercise (yoga) on cognitive functioning and clinical symptoms for female patients in the early phase of psychosis. We further propose to investigate potential mechanism underlying the clinical consequences. **METHOD:** 120 female early psychosis patients were recruited from three hospital/clinic sites and randomized into integrated yoga, aerobic exercise, and control groups. 82 patients completed the 12-week study (29 in yoga group, 25 in exercise group, and 28 in control group). Both interventions were held three times weekly, with each session lasted for an hour. All participants were assessed for clinical symptoms, cognitive functioning and MRI scanning both at the baseline and 12 weeks. **RESULTS:** There was no significant difference in age, education level, and duration of the illness at the baseline among three groups. Using ANOVA to compare the changes between the baseline and 12 weeks in three groups, both yoga and aerobic exercise groups demonstrated a significant improvement in the verbal memory ($P < .05$), and working memory ($P < .01$) compared to control groups. Yoga had a significant effect in enhancing attention and concentration ($P < .05$), which was not found in aerobic exercise group. Cortical thickness was significantly increased in the left superior frontal lobe after aerobic exercise training, and volume of the postcentral cortex increased after yoga practicing. Both imaging findings were significantly correlated with the memory and attention improvements ($r = .39$, $P = .01$). **CONCLUSION:** It suggested that the effect of exercise on memory initially found in male chronic schizophrenia patients (Pajonk et al., 2010) can be replicated in female early psychosis patients in Hong Kong. Yoga had a superior effect on attention and concentration than aerobic exercise. Possible increment in the cortical thickness and volume may indicate a novel neural mechanism mediating the effects of aerobic exercise and yoga in psychosis patients. Further research on the differential mechanism of yoga and aerobic exercise should be explored.