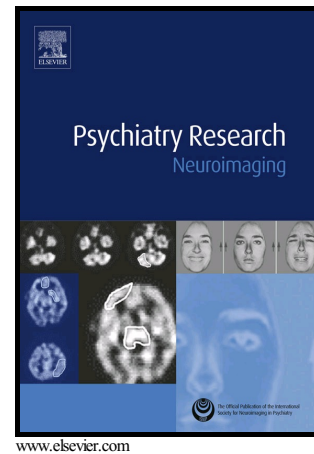


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Neural correlates of psychotic-like experiences during spiritual-trance state

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Abstract

Recent studies indicate high levels of psychotic experiences in the general population. Here, we report a functional imaging study with 8 mentally healthy spiritual mediums and 8 matched controls. The mediums entered a mediumistic-trance state using a standardized manner by closing their eyes and actively seeking to ignore external and internal stimuli to achieve a ‘state of emptiness’; in a control condition, they were instructed to re-enact the same mediumistic experience that they had during the mediumistic-trance condition but in a non-trance state (imaginative-trance). Both mediums and controls took part in a resting state session. The results indicate stronger activation in the lateral occipital cortex, posterior cingulate cortex (PCC), temporal pole, middle temporal gyrus and orbitofrontal cortex during the mediumistic-trance state. We also observe increased functional connectivity within auditory and sensorimotor Resting State Networks (RSN) during mediumistic-trance compared to resting and imaginative-trance conditions. Comparing spiritual mediums and controls, no differences in RSN were found. These data show preserved engagement of prefrontal cortex and connectivity of the default-mode network that indicate maintained introspective control over non-pathological psychotic-like experiences.

Keywords: spiritual-trance, mediumistic-trance, psychotic-like experiences, hallucination, resting state network, imagination.

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