



4th Global Conference on Psychology

21 - 23 August 2026

Oxford, United Kingdom

Quantitative EEG Assessment of Brain Activity During a Facilitated Kundalini Practice

Evgeniia Nikulina, Valeriia Makarova

Trinity Transmission, Spain

Abstract

Background. Kundalini facilitation practices are traditionally regarded as methods for inducing altered states of consciousness accompanied by pronounced subjective sensory, emotional, and cognitive experiences. Despite the widespread use of these practices in various spiritual traditions, objective investigations of the neurophysiological mechanisms associated with the subjective experience during Kundalini facilitation remain limited. Modern quantitative electroencephalography (QEEG) provides an opportunity to investigate patterns of brain electrical activity and functional neural network organization accompanying altered states of consciousness.

Objective. To investigate the characteristics of brain electrical activity and functional connectivity during a Kundalini facilitation practice.

Materials and Methods. Brain activity was assessed using quantitative electroencephalography (QEEG), including spectral power analysis, independent component analysis (ICA), evaluation of the principal EEG frequency bands, occipital alpha peak analysis, and functional connectivity analysis. EEG recordings obtained during an eyes-closed resting state were compared with recordings acquired during the Kundalini facilitation practice.

Results. During the Kundalini facilitation practice, a stable occipital alpha peak was preserved at approximately 11 Hz with high spectral power in both occipital channels. In addition, a pronounced reorganization of functional connectivity was observed between frontal, parietal, temporal, and occipital cortical regions. The most prominent changes occurred within the alpha and beta frequency bands and were characterized by enhanced long-range interregional interactions and reconfiguration of large-scale neural network architecture. No evidence of pathological bioelectrical activity or significant EEG disorganization was detected.

Conclusion. The findings indicate that participation in a Kundalini facilitation practice is associated with a distinct pattern of functional brain organization characterized by increased alpha synchronization and extensive reconfiguration of interregional functional connectivity. These findings describe the neurophysiological correlates of the investigated state but do not allow conclusions regarding the nature or origin of the participants' subjective experiences.

Keywords: Kundalini facilitation; altered states of consciousness; quantitative electroencephalography (QEEG); functional connectivity; alpha rhythm; neurophysiology; brain networks