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Title:

Cognitive (Dys)Regulation in Obsessive-Compulsive Disorder - insights from neuroimaging studies

Abstract

Obsessive-Compulsive Disorder (OCD) is a psychiatric condition characterized by intrusive obsessions and compulsions that significantly impact patients' quality of life. Affecting 1-3% of the population, OCD imposes substantial economic and social costs. According to cognitive models, dysfunctional beliefs contribute to excessive responsibility, thought-action fusion, perfectionism, and intolerance to uncertainty, all of which drive obsessive-compulsive symptoms.

Cognitive emotion regulation, a flexible process aimed at modulating emotional responses, plays a key role in OCD. Research suggests that patients rely more on maladaptive strategies such as suppression, avoidance, and rumination, while adaptive strategies like reappraisal and problem-solving are less effectively used. Neuroimaging studies have shown that individuals with OCD exhibit reduced activation of the frontoparietal network, which correlates with impaired emotion regulation and symptom severity.

To address these dysfunctions, our research team developed an fMRI-based neurofeedback intervention to enhance reappraisal strategies. Preliminary clinical trial results indicate that real-time feedback on orbitofrontal cortex activation can improve emotional regulation and reduce refractory OCD symptoms. These findings highlight the need for novel therapeutic approaches integrating behavioral, pharmacological, and neuromodulation strategies to enhance frontoparietal network function and improve treatment outcomes in OCD.