

# **Mapping the evolution of neurofeedback research: a bibliometric analysis of trends and future directions**

## **ABSTRACT**

**Introduction:** This study conducts a bibliometric analysis on neurofeedback research to assess its current state and potential future developments. **Methods:** It examined 3,626 journal articles from the Web of Science (WoS) using co-citation and co-word methods. **Results:** The co-citation analysis identified three major clusters: "Real-Time fMRI Neurofeedback and Self-Regulation of Brain Activity," "EEG Neurofeedback and Cognitive Performance Enhancement," and "Treatment of ADHD Using Neurofeedback." The co-word analysis highlighted four key clusters: "Neurofeedback in Mental Health Research," "Brain-Computer Interfaces for Stroke Rehabilitation," "Neurofeedback for ADHD in Youth," and "Neural Mechanisms of Emotion and Self-Regulation with Advanced Neuroimaging." **Discussion:** This in-depth bibliometric study significantly enhances our understanding of the dynamic field of neurofeedback, indicating its potential in treating ADHD and improving performance. It offers non-invasive, ethical alternatives to conventional psychopharmacology and aligns with the trend toward personalized medicine, suggesting specialized solutions for mental health and rehabilitation as a growing focus in medical practice.