**ABSTRACT**

The comprehensive investigation into Error-related Potentials (ErrP) across various populations and contexts sheds light on neural processing underlying error detection and cognitive control. Through EEG pattern analysis in healthy patients, comparison of ErrP signals in schizophrenia versus healthy controls, and examination of ErrP acquisition in subjects with learning disabilities, a nuanced understanding of error processing mechanisms has been attained. Distinct neural responses observed in individuals with schizophrenia, characterized by heightened negative suppression, underscore underlying neurobiological dysregulation contributing to cognitive deficits. Moreover, amplified neural responses associated with error detection processes in individuals with learning disabilities offer valuable insights into cognitive processing mechanisms, informing the development of targeted interventions for improving cognitive functioning in this population. Overall, these findings emphasize the importance of understanding the interplay between cognitive impairments, neural processing abnormalities, and predictive coding failures for advancing interventions and treatments in neurological disorders.