

## ABSTRACT

Studies have shown that patients with brain disorders differ from normal individuals in different qEEG measures, and that specific qEEG measures can differentiate between normal and different patient groups with high accuracy. This study investigated whether similar qEEG phenomena are found in autism, and whether a simple single-channel qEEG protocol can generate a clinically useful diagnostic index for autism. One hundred and five normal and 17 autistic children participated voluntarily in the study. In addition to the absolute and relative amplitudes of the 5 conventional spectrums of delta, theta, alpha, sensorimotor rhythm (SMR), and beta, the theta to beta ratio, which was found to be an index of attention, was also examined. In addition, qEEG consistencies in terms of intra-session variability and inter-session consistency were compared between autistic and normal children. Results indicated that autistic children demonstrated significantly higher qEEG amplitudes than normal children. Large effect sizes were found for most of the absolute amplitudes, and to a lesser degree in the relative amplitudes. Autistic children were also found to have significantly higher theta to beta ratio than normal children. In addition, Autistic children were found to be less consistent in these qEEG measures as shown in the higher intra-session variability and the lower inter-session consistency. Discriminant function analysis revealed that the absolute SMR and absolute beta amplitudes were able to correctly differentiate autistic from normal children with 95.2% accuracy. The possibility of using this simple single-channel qEEG protocol in diagnosing children with autism and other brain disorders is discussed.