

Investigation of the EEG Signal Parameters during Epileptic Seizure Phases in Consequence to the Application of External Healing Therapy on Subjects

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Abstract : Epileptic seizure is a type of disease due to which electrical charge in the brain flows abruptly resulting in abnormal activity by the subject. One percent of total world population gets epileptic seizure attacks. Due to abrupt flow of charge, EEG (Electroencephalogram) waveforms change. On the display appear a lot of spikes and sharp waves in the EEG signals. Detection of epileptic seizure by using conventional methods is time-consuming. Many methods have been evolved that detect it automatically. The initial part of this paper provides the review of techniques used to detect epileptic seizure automatically. The automatic detection is based on the feature extraction and classification patterns. For better accuracy decomposition of the signal is required before feature extraction. A number of parameters are calculated by the researchers using different techniques e.g. approximate entropy, sample entropy, Fuzzy approximate entropy, intrinsic mode function, cross-correlation etc. to discriminate between a normal signal & an epileptic seizure signal. The main objective of this review paper is to present the variations in the EEG signals at both stages (i) Interictal (recording between the epileptic seizure attacks). (ii) Ictal (recording during the epileptic seizure), using most appropriate methods of analysis to provide better healthcare diagnosis. This research paper then investigates the effects of a noninvasive healing therapy on the subjects by studying the EEG signals using latest signal processing techniques. The study has been conducted with Reiki as a healing technique, beneficial for restoring balance in cases of body mind alterations associated with an epileptic seizure. Reiki is practiced around the world and is recommended for different health services as a treatment approach. Reiki is an energy medicine, specifically a biofield therapy developed in Japan in the early 20th century. It is a system involving the laying on of hands, to stimulate the body's natural energetic system. Earlier studies have shown an apparent connection between Reiki and the autonomous nervous system. The Reiki sessions are applied by an experienced therapist. EEG signals are measured at baseline, during session and post intervention to bring about effective epileptic seizure control or its elimination altogether.

Keywords : EEG signal, Reiki, time consuming, epileptic seizure

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