ABSTRACT

Epilepsy is one of the seizures that occur in the human brain. Therefore, to find out the seizures that occur in the brain such as epilepsy seizures, the incidence of seizures can be seen through the recording of Electroencephalography (EEG). EEG recordings in the form of brain waves can be used by medical experts to diagnose brain electrical activity in epilepsy. One type of seizure in epilepsy patients is Generalized Non-Specific Seizure (GNSZ).

In this study, the detection and analysis of one of the signals found in epilepsy patients is the signal Generalized Non-Specific Seizure (GNSZ) by comparing brain waves of epilepsy patients with normal people. The method used for feature extraction this time is the Hjorth Descriptor method, where the output of this method is in the form of three parameters, namely activity, mobility, and complexity. For the process, the signal through the preprocessing stage is then extracted using the Hjorth Descriptor to find the characteristic values of each parameter, then classified using the Backpropagation ANN. The dataset used is a 10/20 EEG recording of patients with epilepsy taken from Temple University EEG Corpus.

The results of this study are obtained from the characteristics of the three parameters, namely the activity, mobility, and complexity of GNSZ signals, and can detect GNSZ signals from traits obtained on EEG recordings of epilepsy sufferers. In the research that has been done, the testing accuracy is 100% using the feature extracted from the Hjorth Descriptor feature, namely the character of the activity with the best parameter value from the classification of Backpropagation hidden neural network layer 1, neuron 20, and epoch 50.

Keywords: *Epilepsy, Electroencephalography (EEG), GNSZ, Hjorth Descriptor*