ABSTRACT

Vocal cord disorders affect the quality of the voice produced such as hoarseness, weak voice, and breathless voice. Early diagnosis to determine vocal cord disorders is done by analyzing the quality of the patient's voice signal. This research aims to develop a non-invasive method of early diagnosis by characterizing the signal of patient voice recordings using acoustic parameters. The patient's voice recording is input into the feature extraction algorithm that has been built to obtain the acoustic parameter values. The main acoustic parameters used are Harmonic-to-Noise Ratio (HNR) and Cepstrum Peak Prominence (CPP). One of the attributes of the Fast Fourier Transform (FFT), the fundamental frequency, is used to further characterize the ambiguous characteristics of the voice signal. The acoustic parameter value of the voice signal is analyzed to obtain the distinguishing identity of each sound group. From the research that has been done, the acoustic parameter values of the two main groups of voice signals are obtained. The voice signal group of healthy individuals has an HNR value of more than 23.688 dB and a CPP value range of more than 0.143 to less than 0.169. While the voice signal group of patients with vocal cord disorders has an HNR value range of 0.380 dB to less than 8.364 dB and a CPP value range of more than 0.706 to 0.929. The relationship between the HNR parameter and the CPP parameter is inversely proportional.

Keywords: *Vocal Cord Disorders, Acoustic Parameters, Voice Signal, Harmonic-to-Noise Ratio, Cesptrum Peak Prominence, Fundamental Frequency.*