

The sample was divided into three groups according to the distance between the incisal edge of the most anterior mandibular incisor to that of the upper incisor (whether vertical or oblique).

The pre-and post-treatment speech samples were evaluated by two methods: the objective methods and the subjective method. The sound spectrograph (sonograph) was used for the objective evaluation. The frequency range and duration time of some consonant sounds were measured. These data were confirmed by the spectrum analyzer.

The subjective test or perceptual test was performed by eleven untrained listeners and they were allowed to hear the test material in a random manner.