EFFECTS OF LABIAL ORTHODONTIC APPLIANCES ON SPEECH PERFORMANCE IN INITIAL STAGE OF FIXED ORTHODONTIC TREATMENT

ABSTRACT

Objective: To evaluate speech impairment due to the placement of fixed labial orthodontic appliances

Material and methods: This experimental study was conducted at orthodontic Department of Children Hospital and ICH Lahore. Data was collected from patients coming to Orthodontic Department of Children Hospital Lahore. 26 patients were taken through convenient sampling technique. Patients were selected for treating with Labial orthodontic appliance using GTPI (the Grainger's Treatment Priority Index) scale. Data is collected with the help of demographic sheet, a specifically designed questionnaire which includes five question items, and two groups of phonemes from IPA-Chart. Patients were asked to pronounce a set of consonant and certain bilabial sounds. Speech evaluations were performed and recorded immediately prior to appliance insertion, immediately after insertion, and 3 and 6 weeks post insertion in the presence of speech and language pathologist. Dental/skeletal variables were correlated with the ability to accommodate the presence of the appliances. All the data was entered to SPSS 22 and analyzed with a t-test, Wilcoxon rank sum test and Chi-square test.

Results: Appliance effects were variable: 11% of the subjects were unaffected, 83% were temporarily affected but adapted within 1 months, and 34% of patients showed persistent sound errors at 1 months. Maladaptation to appliances were correlated to severity of malocclusion as determined by GTPI. Labio-dental sounds, most notably /f/, were affected most often.

Conclusions: Insertion of fixed labial appliances has adverse effect on speech sound production. Labio-dental and bilabial sounds are most compromised among all the IPA-Chart sound groups, with /f/ being affected most often. Accommodation to fixed appliances depends on the severity of malocclusion.

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