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EVALUATION OF THE INFLUENCE OF RESIDUAL RIDGE HEIGHT ON MEAN MANDIBULAR FLEXURE ON EDENTULOUS SUBJECTS RECEIVING FIXED MANDIBULAR IMPLANT PROSTHESIS USING INTRA ORAL SCANNER.

By

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ABSTRACT

Background: In recent years, there is increasing trend of edentulous patients opting for fixed implant prosthesis. This fixed implant prosthesis has to take additional load other than occlusal load i.e load from mandibular flexure. Mean mandibular flexure (MMF) is the mandibular deformation characterized by decrease in the arch width during jaw opening and protrusive movements. Previously, mean mandibular flexure was evaluated by using conventional techniques such as making impression of mandible, using vernier caliper and other different gauges.[2] In this study intra oral scanner will be used as digital methods are found to be more precise than conventional methods.[2]

Objectives: To evaluate the influence of residual alveolar ridge height on mean mandibular flexure in edentulous patients receiving fixed mandibular implant prosthesis using intra oral scanner.

Methodology: This study was conducted in the Department of Prosthodontics, Shri Dharmasthala Manjunatheshwara College of Dental Sciences and Hospital, Dharwad. Eighty edentulous subjects (40 male, 40 female) were enrolled in this study. Mean bone height was obtained from orthopantomogram (OPG). Mandibular flexure values were obtained by difference between minimum mouth opening (MnMO) and maximum mouth opening (MxMO) measurements digitally using intra oral scanner. The factors which can influence mandibular flexure values such as residual ridge height of mandible, age and sex was evaluated and tabulated statistically.

Results and interpretation: The data analysis revealed that bone height followed a normal distribution and MMF scores did not. There was no significant correlation between age and MMF scores. There was significant gender differences in MMF scores. There was significant negative correlation between bone height and MMF lower scores in males only.

Conclusion: - The study findings reveal a normal distribution of bone height data but not for MMF scores. Age does not significantly correlate with MMF scores across genders, with weak and insignificant correlations observed. While males exhibit a negative correlation between bone height and MMF lower scores, no such correlation exists for females. Gender differences are evident, with males scoring higher on MMF measures. These insights underscore the importance of gender considerations in MMF outcomes and suggest that factors beyond age may influence MMF effectiveness.

Keywords: - Mean mandibular flexure (MMF), Intra oral scanner, Bone height, Minimum mouth opening (MnMO), Maximum mouth opening (MxMO), Retromolar pad to retromolar pad (R to R) / Upper value , Canine to canine (C to C) / Lower value