# ABSTRACT

**Introduction:** Bite force is an important variable used to assess the masticatory ability and performance of an individual. Among various factors that affect bite force, gender, facial form and arch form have been assessed in this study.

**Keywords:** Arch form, Bite Force, Completely edentulous, Facial form.

**Aim:** This clinical study aims at evaluating the maximum bite force of completely edentulous patients rehabilitated with complete dentures.

**Materials and methods:** 288 samples were divided into two groups (completely edentulous patients and dentulous subjects-144 each); each group into two subgroups (male and female-72 each) and each subgroup into subdivisions based on their facial form (Square, Square tapered, Tapered and Ovoid- 18 each) and arch forms (Square, Tapered and Ovoid- 6 each). The bite force was measured using Bite Force Sensor for both the groups and the mean values were statistically analyzed.

**Results:** ANOVA and Tukey's post-hoc Test revealed that the Square facial form showed the greatest bite force among other facial forms in all the subgroups and Square arch form showed the greatest bite force among other arch forms in most of the subgroups. Independent sample t-Test revealed a significant difference in most of the bite force values between males and females in both the groups and between all the edentulous and dentulous subjects.

**Conclusion:** Gender, facial form and arch form were found to be related to the bite force in both completely edentulous and dentulous subjects. Assessing these parameters in a patient could gain us an insight into their bite force and help us in better treatment planning, material selection, prosthesis design and evaluation and as reference value for future studies.