

## **Maxillary and mandibular arch dimensions of a Sri Lankan population -a preliminary study**

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The data available in the literature on maxillary and mandibular arch dimensions for Sri Lankan population are scanty. The present study was undertaken with the aim of determining the mandibular and maxillary arch dimensions and the variations in arch dimensions according to gender in Sri Lankans.

Dental casts of mandibular and maxillary arches of 193 adults (73 males and 120 females) aged between 20 to 25 years were prepared with hard plaster. The study sample belonged to the Sinhalese ethnic group and selected randomly from a University community. The selected subjects had no history of orthodontic treatment and had the full complement of teeth with the normal occlusion. The length and width of the maxillary and mandibular arches were measured on photographs of the dental casts transferred to a computer using ImageJ software. Means and standard deviations were calculated for each measurement and differences in arch dimensions between males and females was analyzed using SPSS statistical software.

Upper and lower dental arches were wider and longer in males than females. The width of the upper dental arch was significantly higher at most levels in males than in females. Meanwhile except at level 1 (U2-U2), the length of the upper arch was not significantly different between males and females at every level observed. Furthermore, with respect to the lower arch, the width was statistically different at the level of premolars between males and females. Interestingly, the length was significantly higher in males compared to females at all levels observed except at level 6 (U7D-U7D).

The differences in arch dimensions between males and females are important in the management and treatment in orthodontics, forensic odontology and anthropology. However there is a need for studies using large and age diverse populations.