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Facial (Prosopic) Index in Purana Inhabitants at the Foot of Sigiriya, Sri Lanka

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The physical dimensions of the human body depend on age, gender, race, geography, nutrition and many more factors. Cephalometry is an important branch of anthropometry which involves measurements of the head and face. The facial (prosopic) dimension is an important cephalometric parameter which is used to describe gender and racial differences.

The Purana population in Sigiriya who face imminent threat of extinction, traces their ancestry to the times of the Sinhalese kings of the 5th century A.D. This study was carried out to describe facial morphological characteristics of Purana inhabitants living at Talkote, Diyakepilla, Pidurangala and Nagalaweveva- Purana villages at the foot of Sigiriya.

One hundred and seven (107) adult males and 208 adult female Purana inhabitants belonging to Purana pedigree were included in the study. The individual selection was based on verbal pedigree analysis, and pedigree was traced back to at least three generations and those who had craniofacial deformities were excluded from the study. The length and width of the face of the selected Purana inhabitants were measured by spreading caliper, and the facial index was calculated. In general, Purana female measurements were less compared to male. The face length ranged from 9.5cm to 13.5cm in males and 8.5cm to 12.8cm in females. The face width ranged from 10cm to 16cm in males and 10cm to 14cm in females. Among Purana inhabitants, a minimum facial index of 68 and a maximum of 100 was observed in both genders. The maximum facial index was 99 in males and 100 in females. The mean facial index of male inhabitants was 92 ± 5.1 while female was 90 ± 6.2 .

The results indicate that the dominant type of facial shape in Purana male and female is leptoprosopic, being 67% in male and 61% in female. Least common type was hypereuriprosopic in male (2%) and female (6%). The difference in mean morphology (facial index), facial length and facial width between the two genders was significant ($P < 0.05$). The facial morphology of male and female Purana inhabitants being leptoprosopic differs from the reported facial morphology of Indian male as mesoprosopic and female as mesoprosopic (Vaishalia et al 2011). This study confirms the ethnic diversity of facial dimensions among different groups and races of human population and gender based variation.