CHAPTER VII
CONCLUSION

The study was undertaken with a major aim of providing indices for identification of individuals, specifically in situations and events of mass disasters, where such matters are not only of concern for quick response but are also humanitarian in nature. Based on extensive knowledge of existing data and a very thorough collection of data and its subsequent analysis in this context, it can be safely asserted that features of dentition like metric, morphological and palatal rugae are unique in themselves. These can provide to great extent conclusive information for identification purposes.

The present cross sectional study evaluates rare and common features of teeth and palatal rugae in males and females of Ad-Dharmi population of Doaba region of Punjab. The study concludes that identification of an individual can be achieved by using metric and morphological features of teeth as well as palatal rugae.

The present study provides information and analysis regarding morphological features of teeth, that is, common and rare features of the teeth as well as palatal rugae in both the sexes of Ad-Dharmi population. The classification of the palatal rugae in the studied population was achieved by following Thomas and Kotze (1983) classification; one new ruga pattern was also discovered during the present research. The present study observed a new ruga pattern (H-shaped rugae) with the frequency of 7.3% in males and 2% in females in the present population.
The sex differences were maximally found in morphological features of teeth in both the sexes of Ad-Dharmi population are Carabelli’s cusp (males 90% and females 98.7%), occlusion I (males 90.7% and females 86.7%), normal bite (males 75.3% and females 72%), grooves (males 96.7% and females 73.3%), hypocone (males 98% and females 96%), central ridge (males 96.7% and females 90%) and hypoconulid (males 90.7% and females 87.3%).

The sex differences which were minimally found in morphological features of teeth in both males and females of Ad-Dharmi population are shovel shaped tooth (males 23.3% and females 29.3%), occlusion II (males 12.7% and females 11.3%), open bite (males 4% and females 3.3%), anterior cross bite (males 2% and females 2.7%), posterior cross bite (males 5.3% and females 1.3%), diastema (males 8.7% and females 7.3%), crowning (males 1.3% and females 0.7%), caries (males 21.3% and females 18.7%), fracture (males 4% and females 3.3%), peg shaped lateral incisor (males 6% and females 4%), supernumerary teeth (males 0.7% and females 0%), crown wear (males 0% and females 0.7%).

The morphological features such as occlusion III, erosion, hyperdontia, protostylid, twinned teeth, distal trigonid crest, anomalous crown, abrasion were absent among both males and females.

On the basis of length of the palatal rugae it can be safely established that primary rugae in both the males and females are higher in number while fragmentary rugae least in number. Based on the shape of rugae, wavy
pattern commonly occurs in both males and females, straight and curved pattern are intermediate in occurrence and circular are the least in number.

On the basis of direction of palatal rugae, backwardly directed rugae in both males and females are most common in occurrence, forwardly directed are intermediate while perpendicular are least in occurrence, based on the unification of rugae in both males and females diverging type of rugae are common in occurrence and converging type of rugae are least.

Based upon the length of the palatal rugae, sexual dimorphism was found to be statistically significant in both males and females. Mean value was found to be higher in males as compare to females.

Sexual dimorphism was also found to be statistically significant in both males and females with respect to the shape of the palatal rugae only in wavy type of pattern. Mean value was found to be higher in males as compare to females only in wavy type of rugae pattern.

Direction of the palatal rugae also projected sexual dimorphism and it was found to be statistically significant in both males and females in all types of rugae. Mean value was found to be higher in males as compared to females.

Based upon the unification of the palatal rugae, sexual dimorphism was found to be statistically insignificant in both the sexes. Diverging type of rugae had higher number in males as compared to females while, mean value was found to be higher in females as compared to males in converging type of rugae pattern.
The study reveals that the all the metric features taken with the help of anthropometry show statistically significant sex differences (p<0.01) in Ad-Dharmi population showing highest values in males than females.

The study further concludes that dental arch height and inter-canine distance show statistically significant sex differences (p<0.01 and p<0.05). The correlation shows that only dental arch height has statistically significant sex difference with maximum number of facial anthropometric measurements while inter-canine distance shows statistically significant sex difference (p<0.01 and p<0.05) only in bizygomatic breadth. Incisor-incisor distance does not show any statistically significant sex difference with any of the facial anthropometric measurements. The correlation of facial anthropometric variables with the dental arch height, inter-canine distance and incisor-incisor distance clearly show that the resultant relationship may be helpful in forensic casework pertaining to facial reconstruction.

The morphological study of the teeth and palatal rugae and the information obtained from the correlation of facial anthropometric measurements with the three measures of the dental cast can be used in the inferences regarding the identification of an individual. The study will not only be useful to the forensic scientists/forensic anthropologists but can also can help immensely to odontologists, biological anthropologists and anatomists in the sense that the study provides a baseline data of morphological features of teeth and palatal rugae classification of the Ad-Dharmi population for comparison purposes.