

ABSTRACT

Knowledge of development of the facial complex is the key to grasping the anatomical finished product and what can go wrong. Only a full understanding of the growth of the numerous components of the craniofacial structure can lead to successful intervention in the complex interactions that exist during development (Sperber, 1989). The form of the apparently involved structural make-up of the head differs from one population to another (Standring *et al.*, 2005). At the moment there are no published data on facial dimensions of fetal and postnatal South Africans of African descent, as well as the facial asymmetry associated with development thereof.

This research was undertaken to generate facial morphometric data for the African South African populations using a cross section sample. It is envisaged that findings from this study will aid in the management of facial complex dysgenesis and will be useful for other purposes in obstetrics, perinatology and forensic medicine.

In this study anthropometric points were used to define measurements that were taken on skulls to assess changes in facial dimensions with crown rump length and dental eruption schedules used as a proxy for age. The general outcome is an ontogenetic change that is harmonious amongst the facial bony components over time. Both males and females showed similar rate of growth, although, male growth curve was generally ahead of the female. There is no generalised directional asymmetry between the two sides of the face. Similarly, statistically significant fluctuating asymmetry level was found to be raised in the maxillary length and anterior nasal spine-zygion measurements. The prenatal sample also shows a higher level of fluctuating asymmetry than the postnatal sample, in conflict with the high levels of odontometric fluctuating asymmetry observed in the samples used in the study by Kieser and Groenvelde (1988). These changes in fluctuating asymmetry after postnatal period

may be attributed to a decreasing stability in the population with later growth and development.

Key words:

Anthropometric points, Facial development, Fluctuating asymmetry, Prenatal, Postnatal.