

Abstract:

Background: The mandible has a horizontal U-shaped body which is continuous at its posterior end with a pair of vertical rami forming the lower part of the facial skeleton. Knowledge of mandibular dimension is an important consideration during the selection of appropriate reconstruction techniques. **Objectives:** To determine the morphometric parameters in Kenyan adult mandible and to relate them to those of a sample of reconstruction plate and screw. **Design:** A descriptive cross-sectional study. **Setting:** The National Museums of Kenya, Nairobi and the Department of Human Anatomy, University of Nairobi. **Subjects:** Intact whole adult mandibles (n=82) were obtained from the National Museums of Kenya, Nairobi and the Department of Human Anatomy, University of Nairobi. **Results:** The average length of the mandible in males for the right and left sides was 98.6 mm and 100.5 mm respectively while for the females this was 92.2 mm and 94.5 mm respectively. The average height of the ramus of the mandible in male for the right and left sides was 57.40 mm and 58.07 mm respectively while for female this was 51.81 and 52.20 mm respectively. Significant differences were noted among the curved length and heights of the mandible between male and females ($p < 0.05$). Significant differences between the right and left side of the mandible were noted ($p < 0.05$) as well as between the length of the mandible and the length of the reconstruction plate ($p < 0.05$). There were no significant differences in the thickness of the mandible between males and females and; between the left and right sides of the mandible with averages of 13.94 mm at the symphysis, 11.00 mm at the canine, 10.33 mm at the mental foramen, 11.06 mm at the bifurcation of the first molar, 12.36 mm at the bifurcation of the second molar, 8.62 mm at the level of the anterior ramus, 5.41 mm at the gonion and 5.89 mm at the midpoint of the ramus ($p > 0.05$) with strong positive correlations. Significant differences were, however, noted between the thicknesses of the body and ramus of the mandible and the sizes of the screws ($p < 0.05$). **Conclusion:** The baseline parameters of the mandibles for Kenyans can be used in the selection of appropriate reconstruction plates and screws.