MATERIALS AND METHODOLOGY

SOURCE OF DATA
This study will be conducted in the department of Prosthodontics, Rama Dental college hospital and research centre Kanpur. The subjects examined in this study will be patients in the age group 18-35 years. This age group will be included keeping in view all dentofacial growth is accomplished by this time.

Before the study is conducted, permission will be taken from the ethical committee of institution and a written consent will be obtained from all the subjects participating in the study.

The subjects participating in the study will be categorized in to two groups based on gender. In all the subjects four measuring procedures using different craniofacial anatomical landmarks will be used for correlating with the combined mesio distal width of maxillary anterior teeth.

Method –A: Measurement of Horizontal cranial circumference
The subject was seated on the dental chair in erect position with unsupported head. Then the glabella of the subject was located arbitrarily by anatomical landmarks and palpation. Then marked with indelible pencil. After locating the glabella and inion a nylon measuring tape was passed around the cranium in horizontal plane from glabella anteriorly to inion posteriorly and once again to glabella. The measurements were made to the accuracy of 0.1cm.

Method B: Measurement of interzygomatic distance:

The subject was made to seat in dental chair in the erect position with unsupported head. Interzygomatic distance was measured by arbitrary face bow. It is a caliper like device consisting of u-shaped frame. At the projected end of face bow there are two calibrated
condylar rods that contact skin during measurement. The side movement of condylar rod can be adjusted by set screws. The Zygion was located arbitrarily and the condylar rods of the face bow were adjusted over the zygion to touch the skin firmly. The set screw was tightened completely on one side and the opposite set screw was adjusted half way and supported by index finger. The face bow was then brought forward and backward with frame parallel to the floor. The graduation on the supported condylar rod was observed to secure maximum distance between two zygions, the set screw of the supported condylar rod were tightened completely and taken out of the face. This distance of the condylar rod was measured by using a metallic scale calibrated up to the accuracy of 0.1cm.

**Method C: Measurement of interalar distance:**

The subject was made to seat in a dental chair in erect posture with head supported. The two fine points were marked with a microtip pen on the skin of the cheek at the junction of nasiolabial fold and the maximal convexity of the ala of the nose. The distance between two points were measured by digital vernier caliper up to the accuracy of 0.1cm.

**Method D: Measurement of mesiodistal width of permanent maxillary anterior teeth:**

The subject was seated in a dental chair in erect position with head supported. The subject was instructed to look forward and asked to open the mouth. The measuring tips of the divider were kept nearer to contact points of the proximal surfaces of the tooth being measured and two needles of the portions of the divider slowly brought close to secure maximum mesiodistal crown width. The divider was taken out of the mouth and the distance between the two needles of the divider were measured by using metallic scale to the accuracy of 0.5mm.
METHODS OF COLLECTION OF DATA

SAMPLE SIZE CALCULATION AND STATISTICAL ANALYSIS

We will calculate the correlation coefficient \( r \) between Maxillary Anterior Teeth and Horizontal cranial circumference, interzygomatic Distance and Inter alar Distance.

The reported \( r \) is around 0.97-0.99. we have calculated the sample size by choosing \( d = 0.15 \) and restricting the width of the 95% confidence interval. The SE of \( r \) is:

\[
\text{SE}(r) = \sqrt{\frac{1-r^2}{n-2}}
\]

\[
\therefore 1.96 \sqrt{\frac{1-r^2}{n-2}} \leq d=0.15
\]

Where 1.96 is the \( z \) value for \( P=0.95 \)

\[
\therefore n-2 \geq \frac{(1-r^2)\times 3.84}{0.0225}
\]

OR \( n-2 \geq 168 \)

OR \( n \geq 170 \text{ N 200} \)

we have approximated the sample size to 200 considering loss to follow up.