Comparison of soft tissue parameters between north Indian and south Indian using photographs

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Introduction
In the past, orthodontic correction concentrated mainly on the alignment of teeth by both patients and the orthodontist which many times have failed in esthetics as the occlusion might not match with the soft tissue. The role of skeletal structures influencing the facial form is an accepted fact. But, the fact that the soft tissue covering the bony surface of the face plays an equally important part in the stability of the dental arches and aesthetic harmony, the rate of success depends on the result of soft tissue parameters[1],[2],[3],[4],[5],[6]. Hence, in recent years importance have been given equally to extra oral soft tissues, the diagnosis, treatment planning helps to play an important role in the soft tissue evaluation. During early years of orthodontics, plaster models were used for treatment planning followed by numerous cephalometric analyses[7]. There are differences in dentofacial relationship among ethnic or racial groups.[8][9][10][11] Therefore, it is important to develop standards for various populations. The importance of this study is to correct the severity of convexity based on the facial tissues and population group

Methodology
50 randomly selected north Indian and south Indians within the age group of 18-25 were taken for the study. There was no bias. The criteria was they should not have undergone previous orthodontic correction. Photograph was taken using DSLR at a distance of 3 feet from the patient. Those who participated in this study provided informed consent.

Results

<table>
<thead>
<tr>
<th></th>
<th>South indians</th>
<th>North Indians</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>minimum</td>
<td>maximum</td>
</tr>
<tr>
<td>G-Sn-Pg</td>
<td>155</td>
<td>167</td>
</tr>
<tr>
<td>Cm-Sn-Ls</td>
<td>88</td>
<td>104</td>
</tr>
<tr>
<td>N-Prn-Cm</td>
<td>72</td>
<td>80</td>
</tr>
<tr>
<td>G-N-Nd</td>
<td>126</td>
<td>154</td>
</tr>
</tbody>
</table>

Discussion:
Comparasion of soft tissue parameters of north indians and south indians are listed below:

Facial angle:
G-sn-pg is used to determine facial concavity /convexity[]. In the present study, the value of the facial angle for north indian (167-169) was is higher than in south indian (155-167), hence showing that south indians have more convex profile.

Nose tip angle:
Nose tip angle (N–Prn–Cm) determines nose prominence. A mean range of 60o-80o is given for the angle of intersection of the nasal dorsum and a tangent to columella by lines et al. In this study the values of nose tip angle for south Indians(72-80) are more than the north Indians(50-75) indicating less prominent nose tip in north Indians.

According to their study, the nasolabial angle was found to be higher in north Indians(88-104) and lower in south Indians(95-103) This shows that the south Indians have less tipped nose than the north indians which is important in assessing upper lip position

Nasofrontal angle
Naso-frontal angle (G-N-Nd) determines the angulation of nose on face which plays a major role in facial appearance. The present study indicates a prominent nose in south inidians (126-154), leading to more convex profile. It shows that north Indians have less convex profile, less prominent nose with prominent nose tip

Conclusion: The facial values are found to be different for north Indians and south Indians. Profile is found to differ based on population hence it is important to consider population, location and ethnic group while correcting malalignment of teeth for better results.
Reference:

1. Soft tissue cephalometric analysis applied to regional Indian population
   Jay S Upadhyay, Sandhya Maheshwari, Sanjeev K Verma, Syed Naved Zahid

   [PUBMED]


   [PUBMED]

   [PUBMED]

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   [PUBMED]


